

1980

The effects of English language proficiency on self-perceived academic needs of foreign students from developing nations attending Iowa State University

Linda A. Burks
Iowa State University

Follow this and additional works at: <https://lib.dr.iastate.edu/rtd>



Part of the [Sociology Commons](#)

Recommended Citation

Burks, Linda A., "The effects of English language proficiency on self-perceived academic needs of foreign students from developing nations attending Iowa State University" (1980). *Retrospective Theses and Dissertations*. 16175.
<https://lib.dr.iastate.edu/rtd/16175>

This Thesis is brought to you for free and open access by the Iowa State University Capstones, Theses and Dissertations at Iowa State University Digital Repository. It has been accepted for inclusion in Retrospective Theses and Dissertations by an authorized administrator of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.

The effects of English language proficiency
on self-perceived academic needs of foreign students
from developing nations attending Iowa State University

by

Linda Ann Burks

A Thesis Submitted to the
Graduate Faculty in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE

Major: Sociology

Signatures have been redacted for privacy

Iowa State University
Ames, Iowa

1980

TABLE OF CONTENTS

	Page
INTRODUCTION AND STATEMENT OF THE PROBLEM	1
Thesis Outline	4
THEORETICAL ORIENTATION	5
Symbolic Interaction	6
Development of society	8
Development of self	10
Development of mind	12
Symbolic interaction and the socialization process	15
Purpose of Language	16
Linguistic competence	20
Social psychology of second-language learning	21
The Concept of Need	24
Personal Characteristics	28
Relationship to language proficiency	28
Relationship to need	29
Role	30
Past Studies Concerning Foreign Students	35
Relevant personal characteristics of foreign students	38
Hypotheses	41a
METHODS	47
The Sample	47
Data Collection	49
Operationalization	50
English proficiency	50
Importance and satisfaction of needs	53
Operationalization of personal characteristics	56
Empirical hypotheses	58

	Page
Statistical Techniques Utilized	74
FINDINGS	77
Objective I	77
Discussion of English proficiency	80
Objective II	83
Discussion of importance of needs	100
Discussion of satisfaction of needs	128
CONCLUSION	134
BIBLIOGRAPHY	137
ACKNOWLEDGEMENTS	145
APPENDIX A: ADDITIONAL DATA	146
Grade Point Average and Objective English Proficiency	146
Grade Point Average and Subjective English Proficiency	147
Joint Effect of Personal Characteristics and English Proficiency on Importance and Satisfaction of Needs	148

INTRODUCTION AND STATEMENT OF THE PROBLEM

The institution of education has always been one of the mechanisms of central importance in industrial societies in terms of adequate functioning and further development of the "system." This view has been accepted on a world-wide basis which is evidenced by the steady increase in foreign student enrollment at colleges and universities in recent decades. According to the U.S. Bureau of Census (1979), foreign student enrollment in colleges and universities in the United States has increased from 154.6 thousand in 1975 to 235.5 thousand in 1978. The quantitative development of education in the last 20 to 25 years has been an element common to all countries in the world, the less developed as well as the more developed. Education nowadays is universally recognized as a major factor affecting economic and social development, and its numerical expansion has become one of the main concerns of present day policy makers (Carceles, 1979). Many developing nations have found it necessary to engage in cross-cultural education in a desire to gain an insight into knowledge already achieved in industrial societies. The exchange of information between diverse as well as similar nations has proved to be most beneficial to all parties involved (Mestenhauser, 1961). In spite of the fact that cross-cultural education is advantageous in many aspects, it is not without its problems. In the past, contact between people of different cultural and linguistic backgrounds was infrequent; consequently, the need for cultural and linguistic innovations was very slight. In the last 80 years or so, the situation has

radically changed. The rate of interaction between people of diverse cultural backgrounds has accelerated with more influence coming from industrialized nations than vice versa, although reciprocal influences do exist (Fulass, 1971). The type of influence of concern in this research deals with the integration of foreign students from developing nations into American colleges and universities, specifically, Iowa State University of Science and Technology, with a foreign student population of approximately 1,200 for the 1978-1979 academic year.

According to the figures of the Institute of International Education (1952), there were 9,643 foreign students studying in the U.S. in 1930. In 1954, the number had grown to 34,000 (Dubois, 1962). By 1961, foreign students coming to the U.S. increased to 50,000 (Mestenhauser, 1961) to about 110,315 in 1968 (IIE, 1968), and to over 235,000 by 1978. This increase in the number of foreign students attending American universities in recent years has been met with concern of both educators and social scientists. As a result, efforts have been directed toward understanding the problems of adjustment resulting from students' cross-cultural experiences (Smith, 1956; Pruitt, 1977; Quinn, 1975; Hull, 1978).

Foreign students attending universities in the U.S. come from very diverse social, economic, and academic backgrounds yet have one common goal, which is to complete their education. In each of these foreign countries there exist social, educational, religious, and political organizations that are different from those found in the U.S. In order to participate in American society, foreign students

are required to accommodate to the host society. Because of very diverse cultural backgrounds and systems, the foreign students find it difficult, in the beginning, to adapt, adjust, or conform to the norms of the American society (Sewell and Davidsen, 1961).

While a large portion of the literature directs its attention to adaptation, adjustment, and problems of the foreign student, there is little attempt at focusing on what the foreign student needs are in terms of their own perceptions. More often than not, we are inclined to offer our opinions on what foreign students need as opposed to inquiring about what they feel is needed. Adjustment to the American culture itself (as a perceived need) is questionable. For this reason, this study of foreign students will explore needs as perceived by the foreign student from developing nations. Likewise, this study will examine the effects of the language component, in this case English, on the perceived needs in order to determine if this aspect influences their perception of needs. Since the subject matter is the variation of self-perceived needs, self-evaluation of English language proficiency is expected to be highly relevant in accounting for such variation. The main focus will be on the language component in relation to adequate socialization into the academic field. The purpose of this study is to (1) illustrate the relationship between English proficiency and the degree to which certain needs are perceived to be important and satisfied, and (2) identify the background variables that might have an effect on the above relationship.

Thesis Outline

The first chapter presents the theoretical framework on which the analysis is based. Some basic concepts of Symbolic Interaction theory relevant to the present study are discussed, and the general as well as the sub-hypotheses are developed. Methods of data collection, explication from general concepts to operational measures, and the statistical techniques utilized are presented in the chapter entitled "Methods and Measurements." The results of this study are presented with a discussion in the chapter entitled "Findings." The last chapter presents conclusions and suggestions for future research.

THEORETICAL ORIENTATION

The object of this chapter is: (1) to present a theoretical basis in the framework of social psychology with an emphasis on symbolic interaction, language acquisition, and socialization, (2) to introduce and define concepts appropriate to the study, and (3) to develop hypotheses.

The general theoretical orientation of symbolic interaction and concepts related to this study then will be presented. A review of studies on foreign students in the United States follows with the presentation of specific hypotheses.

Social psychology is concerned with the behavioral processes, causal factors, and results of interaction among persons and groups (Lindgren, 1973). The term interaction is used in social psychology to refer to the mutual or reciprocal way in which individuals and/or groups influence one another's behavior, whereby the behavior of an individual or group becomes a stimulus that evokes responses from others (Lindgren, 1973). Primarily, social psychology studies the psychology of the individual in society. This involves probing the many features of the social environment which influence individuals. Social psychology therefore draws upon the storehouse of materials available from other social sciences, such as sociology and cultural anthropology. It borrows some concepts and terms -- for example, social structure, norm, and role -- from these older disciplines.

However, social psychology is not just a composite of psychology on one side and sociology and cultural anthropology on the other.

Increasingly, it applies a distinctive approach by using concepts that extend beyond individual psychology to an understanding of wider social behavior. On the whole, however, social psychology gives major weight to explanations of behavior based in psychological processes, such as perception, motivation, and learning (Hollander, 1976). Some examples of how the social environment influences the individual can be illustrated. We know that people are capable of modifying their behavior through learning. Therefore, principles of learning are useful in understanding the process of bringing up children in the society, called socialization. The question of why we learn some things from others in our social environment, and not other things, is a problem of interest to social psychologists. Another example is that of perception. According to Hollander (1976):

Knowing how an individual perceives the social environment, and is aroused to take action within it, gives us insight into the individual's behavior. A person's own interpretation of the world -- his or her psychological field -- provides a better basis for understanding action than would a list of all the things happening in the immediate environment.

This statement illustrates, most clearly, the need to inquire about how foreign students from developing nations perceive or interpret their needs in order to get a better understanding or insight into their behavior.

Symbolic Interaction

According to the symbolic interactionist view of human nature, humans create and use symbols to denote aspects of the world around them (Turner, 1978; Manis and Meltzer, 1978; and Mead, 1934).

What makes humans unique are their symbolic capacities. Humans are capable of symbolically denoting and invoking objects which can then serve to shape their definitions of social situations, and hence, their actions. Humans are also capable of self-reflection and evaluation. They see themselves as objects in many social situations. For the nature of interaction, interaction is seen as dependent upon people's capacities to emit and interpret gestures (Turner, 1978). Role-taking is the key mechanism of interaction, for it enables actors to view the other's perspective, as well as that of others not physically present (Mead, 1934; Manis and Meltzer, 1978; and Turner, 1978). Role-taking and mind operate together by allowing actors to use the perspectives of others as a basis for their deliberations, or definitions of situations, before acting. In this way, people can adjust their responses to each other and to social situations. With regard to the nature of social organization, social structure is created, maintained, and changed by processes of symbolic interaction. For the symbolic interactionist, it is not possible to understand patterns of social organization -- even the most elaborate -- without knowledge of the symbolic processes among individuals who ultimately make up this pattern (Turner, 1978). Thus, it is important for the foreign student to be able to interpret the symbols of others in order to adjust to social situations.

One of the most significant contributors to the symbolic interaction perspective was George Herbert Mead (1934). Mead appears to have begun his synthesis with two basic assumptions: (1) The biological frailty of human organisms forces their cooperation with each other in

group contexts in order to survive; and (2) those actions within and among human organisms that facilitated their cooperation, and hence their survival or adjustment, would be retained. Starting from these assumptions, Mead was able to organize the concepts so that they denoted how mind, the social self, and society arose and were sustained through interaction (Turner, 1978).

Development of society

George Herbert Mead's (1934) synthesis of mind, self, and society is appropriate for the general background of the present study. According to Mead, in terms of society, all group life is essentially a matter of cooperative behavior. He makes a distinction, however, between infrahuman society and human society. Insects (infrahuman society) act together in certain ways because of their biological make-up. Their cooperative behavior is physiologically determined. In the case of human association, the situation is fundamentally different. Human cooperation is not brought about by mere physiological factors. The very diversity of the patterns of human group life makes it quite clear that human cooperative life cannot be explained in the same terms as the cooperative life of insects and the lower animals. Such cooperation can only be brought about by some process wherein each acting individual: (1) ascertains the intention of the acts of others, and then (2) makes his own response on the basis of that intention (Turner, 1978). What this means is that in order for human beings to cooperate, there must be present some sort of mechanism whereby each acting individual: (1) can come to understand the lines

of action of others, and (2) can guide his own behavior to fit in with those lines of action.

Gestures, at the non-human or non-linguistic level, do not carry the connotation of conscious meaning or intent, but serve merely as cues for the appropriate responses of others. Infrahuman behavior is, largely, a series of direct automatic responses to stimuli. Human beings, on the other hand, respond to one another on the basis of the intentions or meanings of gestures. This renders the gesture symbolic, i.e., the gesture becomes a symbol to be interpreted; it becomes something which, in the imaginations of the participants, stands for the entire act. Human behavior involves responses to interpreted stimuli. We see, then, that people respond to one another on the basis of imaginative activity. In order to engage in concerted behavior, however, each participating individual must be able to attach the same meaning to the same gestures. Unless interacting individuals interpret gestures similarly, unless they fill out the imagined portion in the same way, there can be no cooperative action. This is another way of saying that human society rests upon a basis of consensus, i.e., the sharing of meanings in the form of common understandings and expectations. When a gesture has a shared, common meaning, when it is, in other words, a linguistic element, we designate it as a "significant symbol" (Turner, 1978; Manis and Meltzer, 1978 and Mead, 1934).

Because foreign students were not socialized in this country during childhood, but were socialized with another system of symbols, i.e., their native language, in different socio-cultural environments,

the above literature gives the theoretical basis as to why the language problem is central to the life of foreign students in the U.S.

Development of self

Charles Horton Cooley (1967) made two significant breakthroughs in the study of self. Self was seen by Cooley as the process by which individuals see themselves as objects, along with other objects, in their social environment. Second, he recognized that self emerges out of communication with others. As individuals interact with each other, they interpret each other's gestures and thus are able to see themselves from the viewpoint of others. They imagine how others evaluate them and they derive images of themselves or self-feelings and attitudes. Cooley termed this process "the looking glass self": the gestures of others serve as mirrors in which people see and evaluate themselves, just as they see and evaluate other objects in their social environment.

Mead (1934) stressed that just as humans can designate symbolically other actors in the environment, so they can symbolically represent themselves as an object. The interpretation of gestures, then, can not only facilitate human cooperation, it can also serve as the basis for self-assessment and evaluation. This capacity to derive images of oneself as an object of evaluation in interaction is dependent upon the processes of mind. What Mead saw as significant about this process is that, as organisms mature, the transitory "self-images" derived from specific others in each interactive situation eventually become crystalized into a more or less stabilized "self-conception" of oneself as a certain type of object. With the emergence of these self-conceptions,

actions of individuals were seen by Mead to take on consistency, since they are now mediated through a coherent and stable set of attitudes, dispositions, or meanings about oneself as a certain type of person.

To state that the human being can respond to his own gestures necessarily implies that he possesses a self. In referring to the human being as having a self, Mead simply means that such an individual may act socially toward himself, just as towards others. The mechanism whereby the individual becomes able to view himself as an object is that of role-taking, involving the process of communication, especially by vocal gestures or speech (such communication necessarily involves role-taking). The crucial importance of language in this process must be underscored. It is through language (significant symbols) that the child acquires the meanings and definitions of those around him. By learning the symbols of his groups, he comes to internalize their definitions of events or things, including their definitions of his own conduct (Turner, 1978).

The self is essentially a social process within the individual involving two analytically distinguishable phases: the "I" and the "Me." The "I" is the impulsive tendency of the individual. It is the initial, spontaneous, unorganized aspect of human experience. Thus, it represents the undirected tendencies of the individual. The "Me" represents the incorporated other within the individual. Thus, it comprises the organized set of attitudes and definitions, understandings and expectations, or simply, meanings common to the group. In any given situation, the "Me" comprises the generalized other and, often, some particular other. The "I," being spontaneous

and impulsive, offers the potentiality for new, creative activity. The "Me," being regulatory, disposes the individual to both goal-directed activity and conformity. In the operation of these aspects of the self, we have the basis for, on the one hand, social control and, on the other, novelty and innovation. We are thus provided with a basis for understanding the mutuality of the relationship between the individual and society (Turner, 1978).

Development of mind

Mead stressed that mind arises out of a selective process in which the initially wide repertoire of random gestures emitted by an infant are narrowed as some gestures bring favorable reactions from those upon whom the infant is dependent for survival. Eventually, gestures come to have "common meanings" for both the infant and those in its environment. With this development, gestures now denote the same objects and carry similar dispositions for all the parties to an interaction. When gestures have such common meanings, Mead terms them "conventional gestures." These conventional gestures have increased efficiency for interaction among individuals, because they allow for more precise communication of desires and wants as well as intended courses of action, thereby increasing the capacity of organisms to adjust to one another.

The ability to use and to interpret conventional gestures with common meanings represents a significant step in the development of mind, self, and society. By perceiving and interpreting gestures, humans reveal the capacity to "take the role of the other," since they

can now assume the perspective (dispositions, needs, and propensities to act) of those with whom they must cooperate for survival. By reading and then interpreting covertly conventional gestures, individuals are able to imaginatively rehearse alternative lines of action that will facilitate adjustment to others. Thus, by being able to put oneself in another's place, or to "take the role of the other" to use Mead's concept, the covert rehearsal of action can take on a new level of efficiency, since actors can better gauge the consequences of their actions for others and thereby increase the probability of cooperative interaction.

Mead's hypothesis regarding mind (as regarding the self) is that the mind emerges out of the organic life of man through communication. The mind is present only at certain points in human behavior, viz., when significant symbols are being used by the individual. Mind is seen as a process which manifests itself whenever the individual is interacting with himself by using significant symbols.

The mind is social in both origin and function. It arises in the social process of communication. Through association with the members of his groups, the individual comes to internalize the definitions transmitted to him through linguistic symbols, learns to assume the perspectives of others, and thereby acquires the ability to think. When the mind has risen in this process, it operates to maintain and adjust the individual in his society, and it enables the society to persist. The persistence of a human society depends, here again, upon consensus (Mead, 1934).

John Dewey (1922) specified language as the element differentiating humans from other species on the phylogenetic continuum. For him, linguistic communication constituted the process making human society possible. As the chief exponent of a school of thought known as "pragmatism," he stressed the process of human adjustment to the world. Humans constantly seek to master the conditions of their environment. And thus the unique characteristics of humans arise out of the process of adjusting to their life conditions. What is unique to humans, Dewey argued, is their capacity for thinking. Mind is not a structure but a process that emerges out of efforts by humans to adjust to their environment. Moreover, mind is the unique capacity that allows humans to deal with conditions around them.

W. I. Thomas (1978) contributed two major ideas to symbolic interactionism. The first is his concept of the "definition of the situation," which builds upon Dewey's view that the stimuli confronting a person have no fixed quality, and also points out that self-aware conduct entails prior interpretation and deliberation by the actor. Thomas' second influence upon symbolic interactionism lies in the fact that he was one of the first social psychologists to extend the principles of the perspective (developed with reference to the socialization of children) to the adult level, directing attention to social conditions that lead individuals to reconceptualize their developed selves. This extension represents the first major demonstration of symbolic interactionism's relevance to behavior in the everyday world.

Symbolic interaction and the socialization process

The assumption of the symbolic interactionist approach is such that emphasis is placed upon the cultural and social rather than the biological aspect of human behavior (Cardwell, 1971; Mead, 1934; Manis and Meltzer, 1978; and Turner, 1978). This does not mean that biologic influences are not unimportant. It simply means that the sociologist selectively studies the cultural and social aspects of man. Thus, an initial assumption of the symbolic interactionist is that human behavior is cultural (referring to all the customs, beliefs, values, knowledge, and skills that guide a people's behavior along shared paths) in origin, and further, that human behavior is social (referring to the interaction of the individual and the group or the tendency to form cooperative and interdependent relationships with one's fellows) in its consequences.

Proceeding from this assumption, the symbolic interactionist maintains that human behavior which is identified as cultural and social is in response to stimuli -- stimuli which are identified as symbols. Symbols stand for, or represent, something else. A symbol may be a word, a gesture, a facial expression, or a combination of these. The "thing" which the symbol stands for (or to which it refers) is termed a referent.

Humans learn the meaning attached to symbols and their accompanying referents. We are not born into the world as functioning cultural human beings. The symbolic interactionist maintains that there is no inherent relationship between the symbols used and what they stand for (Mead, 1934; Cardwell, 1971; and Manis and Meltzer, 1978). A given

symbol may stand for anything. Symbols come to refer to certain things as a result of a group of people arriving at consensus as to what a symbol is to stand for or represent. Knowledge of group consensus of the meaning of symbols is acquired via the socialization process (Cardwell, 1971).

Since the meaning of any symbol is not an inherent quality of that symbol, man decides what its meaning shall be. We learn, that is, we are socialized into cultural beings. Taking on the attributes of a socialized human requires learning the meaning of the symbols utilized in the adult world, that is, learning the connection between the symbol and the thing to which it refers. We learn the cultural meaning of the symbols adult humans use in their interaction with each other. If one fails for some reason, either biologic or social, to learn the conventional meanings attached to symbols, he is unable to assume adequately the role of the socialized human (Cardwell, 1971). Were humans not to arrive at consensus as to the meaning of symbols, social interaction would be impossible. One could neither understand nor anticipate the behavior of others, and they could neither understand nor anticipate another's behavior.

Purpose of Language

By its very nature, language is social. Carroll (1953) defines language as consisting of learned responses determined by social interaction. Sapir (1921) considers that "Language is a purely human and a non-instinctive method of communicating ideas, emotions, and desires by means of a system of voluntarily produced symbols" (page 8).

Hayakawa (1964) views language as a system of agreements among human beings which allows various noises produced to systematically stand for specified happenings in their nervous system. In this sense, it mediates between experience and action.

Three points stand out in these definitions; (1) language is acquired from contact with other human beings, (2) language consists of symbolized meanings which are sources of stimulation and mediators of response. Moreover, these meanings can exist in thought as well as in spoken and in written form (Osgood, 1952). A third feature of language then is that it provides the potentiality for dealing with things which are not immediately present.

Social psychologists are concerned with the study of language for two reasons; (1) because it has functional features which affect the individual's perceptions and motivations, and (2) because it has directive features which influence social responses (Hollander, 1976). In other words, language is a tool for thought and a means of social influence. Language becomes a way of defining experience, with significant perceptual effects, with the essence of it to convey meaning.

Terwilliger (1968) distinguishes between language and communication by illustrating that bees perform communication concerning the location of honey. He argues, however, that bees do not have language, because they do not dance about yesterday's or tomorrow's honey, their communications are never wrong, and they don't communicate when there is no honey. For Terwilliger, communication is but one of the possible uses of

language; and language is but one of the media through which communication may take place (page 6).

Members of a given nonhuman species behave in essentially the same way across various environments, but humans do not (Hollander, 1976). We have differing social, economic, religious, political, and family patterns. This cultural diversity would not be possible without language to communicate, consult, remember, and plan (Hockett, 1973). Language also permits individuals as well as whole societies to cope with their environments (Hollander, 1976). Morris (1946) says that society depends upon signs, and especially upon language signs, for its existence and perpetuation (page 205).

The essentials of communication are simple enough to describe, but the understanding of its processes is a complex matter (Hollander, 1976). Communication involves a sender, a message, and a receiver, or recipient, of the message. The ideal of communication is to have the message affect the receiver as the sender intends. Messages are important to the extent that they are received and acted upon. For communication to occur, first messages must be accepted and understood, or decoded. However, misunderstandings are an everyday occurrence. This may be because the meaning of the message is either transmitted or received incorrectly. To get a message straight requires a correct encoding and decoding sequence from the source to the receiver. However, human communication is also very much a social matter. Although language is a marvelous tool for communication, it is an imperfect one, precisely because it requires transmission between at least two people (Hollander, 1976).

According to Whorf (1940), whenever agreement or assent is arrived at in human affairs, this agreement is reached by linguistic processes, or else it is not reached. Languages have grammars, which are assumed to be merely norms of conventional and social correctness:

It was found that the background linguistic system (in other words, the grammar), of each language is not merely a reproducing instrument for voicing ideas but rather is itself the shaper of ideas, the program and guide for the individual's mental activity, for his analysis of impressions, for his synthesis of his mental stock in trade (page 212).

He also states:

We cut nature up, organize it into concepts, and ascribe significances as we do, largely because we are parties to an agreement to organize it in this way -- an agreement that holds throughout our speech community and is codified in the patterns of our language. The agreement is, of course, an implicit and unstated one, but its terms are absolutely obligatory; we cannot talk at all except by subscribing to the organization and classification of data which the agreement decrees (pages 213-214).

General linguistics is partly concerned with the problem of what language does, that is, with the functions of any and every language (Abercrombie, 1965). For one thing, language makes it possible for individuals to live in a society. It is characteristic of and fundamental to, the modern point of view in linguistics to regard language as a social activity rather than as a means of individual self-expression. In this sense, language is defined as a means of social control. However, according to Abercrombie (1965), language has a very individual side also in terms of being an index to various things about the speaker, particularly his personality (page 18).

Linguistic competence

In the previous discussion, it has been shown that language, among other things, makes it possible for individuals to interact with each other, express and shape their ideas, and live in a society. Some scholars go so far as to say that society depends on language signs for its existence and perpetuation. It would follow then that mastery of the signs and symbols of a language or speech community is necessary and/or obligatory for interaction to occur. The members would have to be competent in the language in order to communicate with each other.

Katz (1972) defines "linguistic competence" as "the internalized rules that he (the speaker-hearer) knows" (page 51). Slobin (1971) states that competence can be defined in part as "the language-user's knowledge of grammaticality, grammatical relations, sentence relations, ambiguity, and so on. The sort of linguistic competence referred to here is a system of rules which relates semantic interpretations of sentences to their acoustic phonetic representation." In this sense, competence is a type of ability. Linguistic competence is what would be reflected in performance were it not for limitations on memory, time, attention, emotional detachment, and the like (Cooper, 1975). What is purely linguistic knowledge is that knowledge which is reflected in performance under certain conditions.

The linguist will select from a long list of factors affecting performance, both linguistic and non-linguistic, those which are relatively specific to language skills. A disability for forming questions will, whereas general limitations on attention will not, figure on the selected list. The person who is linguistically

incompetent will then be the one who suffers from these limitations.

It is important to realize that often it is a matter of choice, to a degree arbitrary but influenced by a variety of considerations including those of simplicity, homogeneity, and cohesion with general grammatical theory, what factors limit competence. All we need do is to bear in mind that statements about ability, and so about linguistic competence, are conditional in form. Given this, it is surely a categorical error to equate linguistic competence with knowledge. To say that a person is competent to do something is to say he could do it if certain conditions held. Nevertheless, acquisition of linguistic rules is a must for an individual to effectively interact with others and function in daily life.

Because this study is concerned with the linguistic competence of foreign students in a second language¹, it is necessary to discuss the social psychological aspect of learning a second language.

Social psychology of second-language learning

When viewed from a social-psychological perspective, the process of learning a second language takes on a special significance. From this viewpoint, one anticipates that if the learner is appropriately oriented, he may find that by learning another social group's language,

¹The assumption here is that foreign students in this study have acquired English as a second language, even though some of them may have been exposed to English during their childhood mainly because English has been adopted as an official language among some of the developing nations.

he has made the crucial step in becoming an acculturated part of a second linguistic-cultural community. Advancing toward biculturalism in this sense may be viewed as a broadening experience in some cases. With a different orientation, a language learner may look on his learning task as making him better educated or as equipping him with a useful skill for his future occupation, with little regard for the culture or the people represented by the other language. In other circumstances, one might consider learning another group's language as a means of getting on the "inside" of a cultural community in order to exploit, manipulate, or control, with clearly personal ends in mind. The social-psychological theory of language learning, in brief, holds that an individual successfully acquiring a second language gradually adopts various aspects of behavior which characterize members of another linguistic-cultural group. The learner's ethnocentric tendencies and his attitudes toward the other group are believed to determine his success in learning the new language. His motivation to learn is thought to be determined by his attitudes and by his orientation toward learning a second language. The orientation is "instrumental" in form if the purposes of language study reflect the more utilitarian value of linguistic achievement, such as getting ahead in one's occupation, and is "integrative" if the student is oriented to learn more about the other cultural community as if he desired to become a potential member of the other group. However, the more proficient one becomes in a second language, the more he may find that his place in his original membership group is modified at the same time as the other linguistic-cultural group becomes something more than a reference

group for him. It may, in fact, become a second membership group for him (Lambert, 1965).

Language learning is motivated by a basic desire to be like valued people in one's environment, first by family members and then by others in the linguistic community. A successful learner has to identify with language users to the extent that he wants to be like them linguistically, and undoubtedly in many other ways (Lambert, 1965). In a similar fashion, Lambert (1965) argues that the learner must want to identify with members of the other linguistic-cultural group and be willing to take on very subtle aspects of their behavior such as their language or even their style of speech. However, MacNamara (1973) states that favorable attitudes are of only minor importance in contributing to success in language learning. For MacNamara, a child suddenly transported from Toronto to Berlin will rapidly learn German no matter what he thinks of the Germans. He will learn German because he must understand what is being said to him precisely when it is said, and he must communicate precisely when the need arises. The child does not learn German because of an appreciation that German will prove useful at some future date, but rather because it is useful now. This point can be equated with the situation in which foreign students find themselves in studying in a foreign country. According to MacNamara, learning a second language becomes a necessity in order to understand members of the new environment. It is useful because it satisfies the need to communicate with other members. It seems appropriate, at this point, to consider the

concept of need in order to explore the relationship between language proficiency and needs.

The Concept of Need

A common understanding of all human beings is that the concept of need exists for all organisms, and that behavior is directed at satisfying these needs. This concept can be divided into two categories, that of physiological (biological or primary) needs and psychological (growth or secondary) needs.

Some needs warrant priority over others in seeking satisfaction for them. Biological needs must be satisfied before an individual can turn his attention to secondary or higher needs. Abraham Maslow (1954) developed a hierarchy of needs which he considered invariant in the sense that they must be satisfied in a prescribed order. These are:

- 1) The physiological needs: hunger, thirst, air, and the like.
- 2) The safety needs: the need for freedom from threat or danger and the need to ally oneself with the familiar and the secure.
- 3) The belonging and love needs: the need for affiliation, belonging, and acceptance.
- 4) The esteem needs: the need for achievement, strength, competence, reputation, and status or prestige.
- 5) Cognitive needs: the need to know and understand, the need to satisfy curiosity, the need to understand the mysterious, and the need to tackle the unknown.
- 6) Aesthetic needs: the need for symmetry, order, system, and structure.

- 7) The need for self-actualization: the need for self-fulfillment and the realization of potentialities, and the need to become what one is capable of becoming.

Maslow makes a number of points about his list of needs. First, they are ordered in a developmental sequence, from those that are lower in their biological development to those that are higher. Second, the order represents a kind of priority, and third, although higher needs can be postponed and are less urgent, living at the level of higher needs leads to greater biological efficiency (Lindgren, 1973).

Hunger, thirst, and sex are among the basic biological needs, all of which facilitate one's self-preservation and survival (Seidenberg and Snadowsky, 1976). Accordingly, primary needs for water, food, air, and sex reflect a general, undifferentiated drive state leading to increased activity, making the organism likely to encounter whatever was necessary to satisfy its need (Berkowitz, 1969). Physiological needs are basic to living organisms, and a general consensus of what they are and how they are met can be reached rather easily (Seidenberg and Snadowsky, 1976; Berkowitz, 1969; Maslow, 1954; and Lindgren, 1973).

Need is a term borrowed from physiology by way of clinical psychology and personality theory. A need is, basically, a lack of something vital or important to the organism -- a deficit. It does more than merely designate goals or behaviors, however; it also implies that a given goal or behavior is vital, and that without it, life would cease, or normal growth would be compromised or impeded (Lindgren, 1973). Psychological needs are an extension of this basic idea, except that we do not generally think of psychological needs as being crucial to

human existence in an immediate sense, although they may have long-range implications with respect to the ability to survive. They are, instead, categories of goals and/or behaviors that vary considerably from person to person, but that function to a greater or lesser extent in all of us. Another way to look at psychological needs is to think of them as motives rooted in systems or complexes of attitudes or values that are more or less consistent with one another and that function to generate certain kinds of behavior (Lindgren, 1973).

Despite the fact that there are people in America and every other country who are poorly fed, poorly clothed, and poorly housed, mankind's physiological needs are better provided for now than at any time in the past (Lindgren, 1973). Applying Maslow's hierarchy of needs, we might say that America, while still concerned with its physiological needs, is beginning to direct more concern to needs of a higher order. That is, even though hunger, shelter, and the cleansing of the air are not completely satisfied needs, our nation has begun to study how well we are achieving our higher order needs (Wrightsmen, 1972).

The concept of need, as mentioned earlier, covers a broad area and can be examined in terms of the physiological and psychological characteristics. For the purpose of this study, needs will be examined mainly in terms of the psychological aspects and limited to those areas in which the foreign students are actively engaged in for academic purposes. The extent to which certain needs are perceived to be important in that these needs are meaningful or significant in obtaining their goal, namely, education is of central concern here.

Also, satisfaction of these needs is examined in order to determine if whether or not these needs are being met.

It has been shown that language acquisition and proficiency are significant for interaction to occur among individuals. In relation to needs, MacNamara points out that individuals must be able to communicate when the need arises and that language becomes useful in satisfying their needs. As the literature surveyed above emphasizes, language acquisition and language proficiency are fundamental in order for human beings to have their needs satisfied. In this light, differential language proficiency will lead to recognition of different types of needs or different intensities of the same need among individuals.

Based on the previous discussion of language and need theories, the following general hypotheses were developed:

General Hypothesis I: Importance of needs perceived by individuals varies by their language proficiency.

General Hypothesis II: Satisfaction of needs perceived by individuals varies by their language proficiency.

Since this study is focusing on the proficiency in a second language by individuals, i.e., in English, it is necessary to consider various personal characteristics of the individuals in examining perceived importance and satisfaction of needs.

Personal Characteristics

Relationship to language proficiency

Learning a second language is dependent on personal characteristics (Lozada, 1970; Gabriel, 1973; and Longest, 1969). It is hypothesized that importance and satisfaction of needs depend directly upon proficiency in the second language and indirectly upon various personal characteristics of the second language learner. Language proficiency, when it is a second language, varies greatly among individuals with regard to their past experiences and characteristics. Previous studies show that foreign students experience English difficulties during the first year and that the difficulties decreased after one year (Lozada, 1970; and Gabriel, 1973). Longest (1969) found that foreign students who attended an orientation program had higher English language test scores and higher academic performance. Hull (1978) found that foreign students without scholarships were more likely to interact with U.S. nationals. He also reported that foreign students majoring in Art and Humanities tended to interact with U.S. nationals more than other majors did.

The variation of proficiency is less problematic when the language of concern is a native language to individuals. It has been documented that the critical age of language acquisition is up to early adolescence (e.g., Labov, 1972, and West, 1975). Many foreign students learn English after the critical age of language acquisition. Thus, variation in their proficiency in English has been one of the central concerns

among educators in U.S. colleges and universities (Dunnett, 1977; Wotiz, 1977; Morris, 1960; Selltiz et al., 1963; and others).

Relationship to need

Earlier, it was hypothesized that importance and satisfaction of need depends indirectly upon various personal characteristics including experience (page 28). It is also hypothesized that personal characteristics have a direct influence on importance and satisfaction of needs. At this point, it is necessary to review some of the studies illustrating the relationship of such characteristics with importance and satisfaction of needs (or adjustment problems).

Social-psychological needs are those which an individual has by virtue of the fact that he or she lives in a social environment and leads life in relation to other human beings. Therefore, such needs are principally the results of social learning (Lindgren, 1973), which reflect one's past experience as a member of a society and one's present social milieu. Thus, there tends to be greater variation regarding social-psychological needs. While physiological needs can be modified in their intensity by social learning, social-psychological needs are even more responsive to such modification (Lindgren, 1973). The studies on foreign students suggest that satisfaction with their stay in the U.S. and ease of adjustment vary by sponsorship (Pruitt, 1977; and Hull, 1978), major field of study (Quinn, 1975; and Hull, 1978), length of stay in the U.S. (Lozada, 1970; Gabriel, 1973; Quinn, 1975; Shattuck, 1961; and Sharma, 1971), region or origin (Spaulding and Flack, 1976; and Hountras, 1956), orientation (Selltiz et al.,

1963; and Lozada, 1970), academic level (Quinn, 1975; Porter, 1962; and Selltiz et al., 1963), age (Hull, 1978; Clark, 1963; and Han, 1975), sex (Dunnett, 1977; Clubine, 1966; and Pruitt, 1977), and marital status (Dunnett, 1977; Clark, 1963; and Siriboonma, 1978). More discussion on specific characteristics will be presented later. At this point, based on the above literature, two additional general hypotheses are stated:

General Hypothesis III: Personal characteristics of individuals have a direct influence on importance of needs and an indirect effect on them through language proficiency.

General Hypothesis IV: Personal characteristics of individuals have a direct influence on satisfaction of needs and an indirect effect on them through language proficiency.

In this study, concern is with foreign students from developing nations in particular. Therefore, it is necessary to identify specific needs central to this population in terms of the roles they play. Furthermore, their characteristics, including past experiences, relevant to such needs are to be identified. A brief discussion on the concept of role and a review of studies on foreign students' needs and problems is in order.

Role

A role definition refers to the expected behavior pattern, or the plan of action which is associated with a particular position (Cardwell,

1971). This definition informs us that role definitions (1) are associated with particular positions and (2) refer to behavior that is expected of an individual, not to his actual behavior. Role definitions, then, are associated with a given position and entail the appropriate plans of action for playing the role for an individual who happens to occupy the position. Moreno (1953) distinguishes between different types of role: (1) "psychosomatic roles," in which behavior was related to basic biological needs, as conditioned by culture and in which role enactment was typically unconscious; (2) "psychodramatic roles," in which individuals behave in accordance with the specific expectations of a particular social context; and (3) "social roles," in which conventional social expectations exist (i.e., student, worker, Christian, father, etc.). For Mead, it is the capacity to take roles and mediate self-images through a stable self-conception that distinguishes the human organism from other organisms. Although this conceptualization of self and role-playing capacities offers the potential for visualizing unique interpretations of expectations and for analyzing spontaneous forms of role playing, the opposite set of assumptions are more often connoted in role theory. That is, concern appears to be with the way individuals conform to what is expected of them by virtue of occupying a particular status. The degree and form of conformity are usually seen as the result of a variety of internal processes operating on individuals (Turner, 1978). Depending upon the interactive situation, these internal processes are conceptualized in terms of variables such as (1) the degree to which expectations have been internalized as a part of an individual's need structure (Parsons,

1951; Goode, 1960); (2) the extent to which negative or positive sanctions are perceived by individuals to accompany a particular set of expectations (Skinner, 1953; Biddle and Thomas, 1966; and Shaw and Costanzo, 1970); (3) the degree to which expectations are used as a yardstick for self-evaluation (Biddle and Thomas, 1966; and Kelly, 1952); and (4) the extent to which expectations represent either interpretations of others' actual responses or merely anticipation of their potential responses (Turner, 1956 and 1954; and Biddle and Thomas, 1966).

Despite agreement over the general features of role, current conceptualizations differ (Neiman and Hughes, 1951; Biddle and Thomas, 1966; Shaw and Costanzo, 1970; and Deutsch and Krauss, 1965). Depending upon which component of role is emphasized, three basic conceptualizations are evident: prescribed, subjective, and enacted roles (Deutsch and Krauss, 1965; and Levinson, 1963). For prescribed roles, in which conceptual emphasis is placed upon the expectations of individuals in statuses, and the social world are assumed to be composed of relatively clear-cut prescriptions. The individual's self and role playing skills are then seen as operating to meet such prescriptions, with the result that analytical emphasis is drawn to the degree of conformity to the demands of a particular status. With subjective roles, which assumes that since all expectations are mediated through the prism of self, conceptual emphasis is placed upon interpretations by individuals in statuses. When conceptual emphasis falls upon the perceptions and interpretations of expectation, the social world is conceived to be structured in terms of individuals' subjective assessments of the interaction situation.

Thus, conceptual emphasis is placed upon the interpersonal style of individuals who interpret and then adjust to expectations. For enacted roles, both the prescribed expectations and the subjective assessment by individuals of these expectations are revealed in behavior. When conceptual priority is given to overt behavior, then the social world is viewed as a network of interrelated behaviors (Turner, 1978).

Role, as defined by Faules and Alexander (1978), is what an individual has to do in order to be accepted by others as an occupant of a given position, status, or office. It is through the learning process that one comes to expect certain behaviors to be associated with particular positions. These behaviors are conveyed by verbal and nonverbal cues, which places the communication process at the heart of any discussion of role enactment. For Stone and Farberman (1970), a role is "those expectations mobilized by an identity through verbal and nonverbal communication in a specified social situation." This definition stresses the notion that the individual must identify the situation and also his or her place in that situation. The part played by self in role enactment is thus critical to the selection of alternative behaviors.

The concept of role helps us to understand, to some extent, why people behave in certain ways. Individuals must be able to recognize and define social situations in order to play roles. In turn, people organize their perceptions of situations in terms of roles played by themselves and others.

Foreign students come to the United States for educational purposes and thus take on the status of a foreign student among other statuses

they as individuals occupy, e.g., the status in the family. The role he or she plays by virtue of occupying the status of a foreign student is the central concern in this study. As previously stated, knowledge of a language can be a key indicator for adequate socialization into a society. It follows then that knowledge of English will be crucial for the foreign student's understanding of the role he or she is to play. This is pertinent to the needs a foreign student would have in relation to the role he or she plays, role performance itself, and the satisfaction he or she achieves in meeting the needs, which themselves arise by virtue of playing the role of a foreign student.

The role of a foreign student can be viewed as a set of roles.

According to Merton (1957):

Each social status involves not a single associated role, but an array of roles. This feature of social structure gives rise to the concept of role set: that complement of social relationships in which persons are involved simply because they occupy a particular social status. Thus, a person in the status of medical student plays not only the role of student, vis-a-vis the correlative status of his teacher, but also an array of other roles relating him diversely to others in the system, i.e., other students, physicians, nurses, social workers, medical technicians, and the like.

Examination of all roles associated with the status of a foreign student could be an extensive attempt.

In this study, the roles of foreign students to be studied will be limited to their role in relation to faculty members and that in relation to U.S. students in terms of their primary involvement in academic activities. Thus, the needs of concern will be types of needs assumed to be central to these two roles foreign

students play: need for interaction with university faculty members and that for involvement in academic activities.

Past Studies Concerning Foreign Students

An overwhelming majority of the literature related to foreign students is directed towards the problems, more so than the perceived needs, of foreign students.

A general consensus of the literature reveals that English language proficiency is of central concern to foreign students attending universities and colleges in the United States.

The general notion arrived at in the literature is that foreign students do experience many problems while attending educational institutions in the United States (Cannon, 1959; Rising and Copp, 1968; Johnson, 1971; Breuder, 1972; Gabriel, 1973; Moghrabi, 1972; Han, 1975; Nenyod, 1975; Bohn, 1957; and others). These problems cover a vast number of areas, but the main focus appears to be on English language proficiency, adjustment, adaptation, and satisfaction or dissatisfaction of social relationships with members of the host culture (Dunnett, 1977; Moore, 1965; Gaither and Griffin, 1971; Pruitt, 1977; Selltiz et al., 1963; Quinn, 1975; and Hull, 1978).

For foreign students in the U.S., English language proficiency is likely to be of central importance. Most of what they do in terms of academic work and social conduct depends on their English proficiency. There is an overwhelming amount of research concerning proficiency in English and its positive relationship to academic performance (Sugimoto,

1966; Ohuche, 1967; Halasz, 1969; Uehara, 1969; Elting, 1970; and Melendez, Craig, 1970).

Lack of proficiency with English is often thought of as the source of foreign student social problems. Morris (1960) found that difficulty with English was negatively related to foreign student satisfaction with stay and contact with U.S. nationals. Nenyod (1975) concluded that some social and housing problems were due to lack of proficiency in English.

Wotiz (1977) found that though foreign chemistry students in American universities frequently resist enrolling in English classes, re-examination at the completion of the program showed marked improvements in communication skills. Such students became less "withdrawn" and their personality "outreach" improved. However, Wilson (1976) found that high English proficiency was not necessary to score high on activity and involvement.

Jenkins (1978) stressed the crucial importance of English proficiency, while noting that this must be considered in relationship to "academic ability and native intelligence."

Penn and Durham (1978) found that barriers to interaction of foreign students at Oregon State University were related to understanding the language and unfamiliarity with American customs.

Stafford (1978) did a study on international students enrolled at North Carolina State University to assess the relationship between adjustment of international students and their expressed need for special programs and services. Results showed that problems of adjustment and homesickness were the most difficult areas, while

housing, social relationships with members of the opposite sex, English language, and finances were found to be the next most problematic areas.

Cannon (1959) asserted that three major problems of foreign students were with regard to communication, finances, and scholastic requirements. Rising and Copp (1968) uncovered lack of proficiency in English as the major problem. Johnson (1971), in a study of foreign students at the University of Tennessee, also claimed that English language proficiency was the most frequent problem of foreign students. Johnson suggested, by comparing responses of foreign students and those of American students, that the problems of both foreign students and American students were basically the same except for the language problem. Breuder (1972) found that foreign students in Florida colleges cited problems with financial aid, English language, placement, and admission. Moghrabi (1972) studied the problems of foreign students at the University of Nebraska and found that English language problems were the most prominent. He also found that emotional anxiety was commonly due to lack of social life and linguistic problems. Gabriel's (1973) study at Purdue University again revealed that most foreign students experienced language difficulties in understanding lectures, writing term papers, and expressing ideas, even though these problems became less important after the first year.

Han's (1975) findings at the University of Southern California also identified finance, English language, and making American friends to be the most serious problems. Nenyod (1975) revealed that the major problems of foreign students in Texas were communication, academic,

financial, housing and food, religious, social, and personal in a descending order of seriousness.

Kincaid (1951), however, in studying a sample of foreign students from developing nations on seven California campuses, reported that there were no serious problems in English language, finance, housing, and course of study or grades. In terms of needs as determined by foreign students, Neikirk (1975) studied the perceptions of faculty, foreign students, and foreign alumni about foreign student needs and services available at Andrews University; opportunities for involvement for their spouses, English language instruction, equal treatment in financial matters, practical application and experience, more friendly faculty/student relationships, and more flexibility in visa and employment regulations were found to be the most important needs as expressed by foreign students. Bohn (1957) found that one-third of the foreign students in his study thought that their study programs in the United States did not meet their academic needs. He attributed this problem to be due mainly to communication problems.

Relevant personal characteristics of foreign students

In theory, as mentioned previously, adjustment entails knowledge of significant symbols. Consequently, linguistic competence is viewed as necessary for adequate socialization and adjustment into a society. The majority of the literature focuses on adjustment problems of the foreign student, among which lack of English language proficiency has been recognized as a major problem. Various personal characteristics have been found to be related to English proficiency

of foreign students as well as adjustment problems in general. Those characteristics will be delineated next.

Sponsorship and major field of study Sponsorship in relation to adjustment to the U.S. environment has been studied. Pruitt (1977) found that being sponsored by one's government was positively related to social adjustment. Quinn (1975) found that field of study was related to successful adjustment. The results show that students majoring in liberal arts had more successful adjustment than those in the scientific disciplines.

Length of stay Length of stay has been studied in relation to adjustment (Quinn, 1975; Hull, 1978; Lozada, 1970; and Gabriel, 1973). Quinn (1975) found that years at Stanford University were positively related to successful adjustment. Hull (1978) found that length of stay in the U.S. was related to adjustment. Shattuck (1961) found that some foreign students who had been in the U.S. for one or more years often remained seriously maladapted and did poorly in academic work, while Sharma (1971) found that the length of stay had little effect on problems of foreign students.

Region of origin and orientation In investigating problems of foreign students in relation to region of origin, Spaulding and Flack (1976) concluded that the problems of foreign students tended to vary depending on the country or region of the world from which they came. Hull (1978) also found that goals, adjustment, and problems of foreign students vary by country of origin. Hountras (1956) reported that African students had the fewest problems. He also found that

students from the Near East, the Far East, and Latin America had more difficulties than those from other regions. Selltiz et al. (1963) found that attending orientation was likely to increase social relations formed with U.S. nationals by Asian students. Lozada (1970) found that orientation programs encourage personal contacts and friendships.

Academic level Selltiz et al. (1963) found that undergraduate foreign students had more social relationships than graduate foreign students. Quinn (1975) found that undergraduate foreign students had more successful adjustments, while Ph.D. students had the least successful adjustment. Porter (1962) found that undergraduates checked more problems in the Michigan International Student Problem inventory than graduates.

Age Gaither and Griffin (1971) state that adjustment problems for younger foreign students were minimal compared to those of older students. Han (1975) reported that foreign students who were more than 30 years old encountered more major academic problems than younger ones. Hull (1978) found that older students were more involved with academic concerns, while Clark (1963) found that older students were more satisfied with their overall experiences in the United States.

Sex and marital status Dunnett (1977) states that the sex difference of foreign students was an important factor in adaptation in the United States. Clubine (1966) found female foreign students were more familiar with resource persons on campus than males. However, Pruitt (1977) reported that male African students were better adjusted to the U.S. environment than female counterparts. In relation

to problems experienced, Dunnett (1977) found that marital status was an important factor in the adaptation of foreign students. Clark (1963) and Siriboonma (1978) found that more married students than single students were satisfied with their U.S. experiences.

Hypotheses

Based on the reviewed literature on foreign students, concepts included in the general hypotheses presented on pages 27 and 30 are now specified as the following:

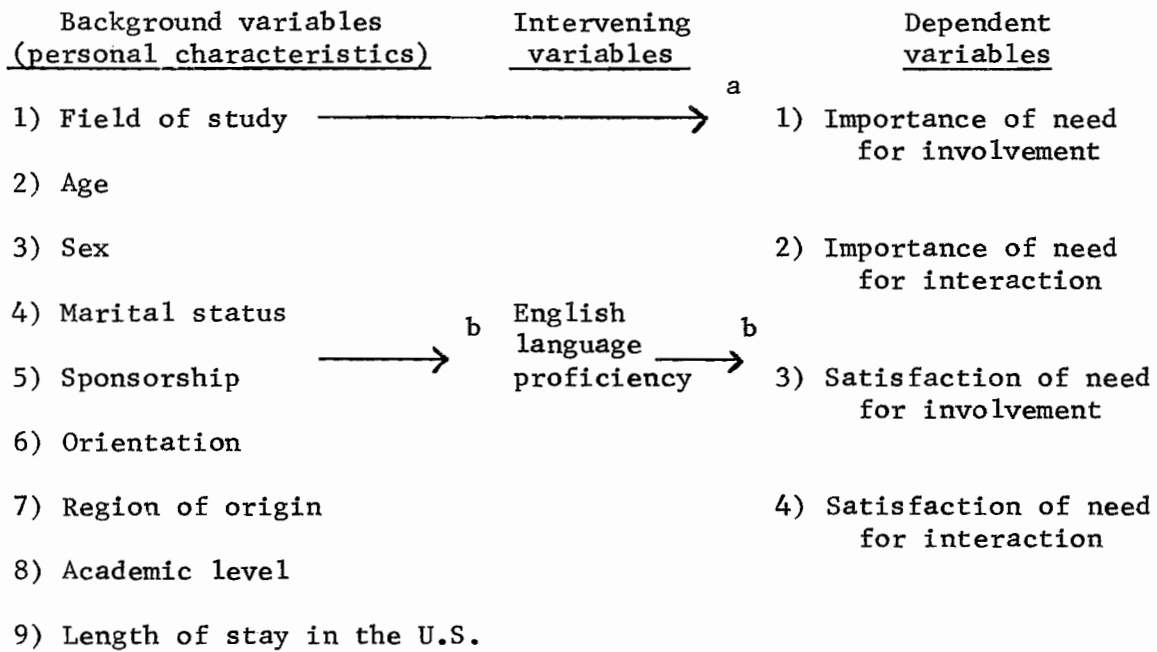
1) Needs: Will deal with only those needs of foreign students central to their role relationships with faculty members and U.S. students in pursuing academic activities. Specific needs of concern, then, are labeled as need for involvement in academic activities and need for interactions with faculty members in their academic environments. Their importance and satisfaction will be investigated.

2) Individuals: Individuals of concern are foreign students from developing nations at Iowa State University. They will be referred to as foreign students in the remaining part of this thesis.

3) Language proficiency: Will be concerned only with proficiency in English for this study. English is assumed to be the second language for almost all of the students in this study, with possible exceptions which we have no way of knowing within the limitation of data.

4) Personal characteristics: Will be limited to only those personal characteristics identified to be relevant to the subject matter in the review of past studies on foreign students as reported above (pages 39 and 40).

For the purpose of clarity, the following diagram illustrates a summary of the hypotheses to be presented. The arrows do not necessarily imply causality but are used to indicate relationships as stated in the hypotheses.



^aDirect effect of personal characteristics.

^bIndirect effect of personal characteristics through English language proficiency.

From General Hypothesis I, which states that importance of needs perceived by individuals varies by their language proficiency, the following sub-hypotheses were developed.

Sub-Hypothesis

- 1.1. Foreign students with a better command of English tend to place more importance on the need for involvement in academic activities than those with a poorer command of English.
- 1.2. Foreign students with a better command of English tend to place more importance on the need for interaction with university faculty members than those with a poorer command of English.

From General Hypothesis II, which states that satisfaction of needs perceived by individuals varies by their language proficiency, the following sub-hypotheses were developed.

Sub-Hypothesis

- 2.1. Foreign students with a better command of English tend to feel more satisfied with the need for involvement in academic activities than those with a poorer command of English.
- 2.2. Foreign students with a better command of English tend to feel more satisfied with the need for interaction with university faculty members than those with a poorer command of English.

From General Hypothesis III, which states that personal characteristics of individuals have a direct influence on importance of needs and an indirect effect on them through language proficiency, the following sub-hypotheses were developed.

Sub-Hypothesis

- 3.1. Perceived importance of needs regarding involvement in academic activities varies directly by field of study of foreign students and indirectly through their English language proficiency.

- 3.2. Perceived importance of needs regarding interaction with university faculty members varies directly by field of study of foreign students and indirectly through their English language proficiency.
- 3.3. Perceived importance of needs regarding involvement in academic activities varies directly by age of foreign students and indirectly through their English language proficiency.
- 3.4. Perceived importance of needs regarding interaction with university faculty members varies directly by age of foreign students and indirectly through their English language proficiency.
- 3.5. Perceived importance of needs regarding involvement of academic activities varies directly by sex of foreign students and indirectly through their English language proficiency.
- 3.6. Perceived importance of needs regarding interaction with university faculty members varies directly by sex of foreign students and indirectly through their English language proficiency.
- 3.7. Perceived importance of needs regarding involvement in academic activities varies directly by marital status of foreign students and indirectly through their English language proficiency.
- 3.8. Perceived importance of needs regarding interaction with university faculty members varies directly by marital status of foreign students and indirectly through their English language proficiency.
- 3.9. Perceived importance of needs regarding involvement in academic activities varies directly by sponsorship of foreign students and indirectly through their English language proficiency.
- 3.10. Perceived importance of needs regarding interaction with university faculty members varies directly by sponsorship of foreign students and indirectly through their English language proficiency.
- 3.11. Perceived importance of needs regarding involvement in academic activities varies directly by orientation of foreign students and indirectly through their English language proficiency.

- 3.12. Perceived importance of needs regarding interaction with university faculty members varies directly by orientation of foreign students and indirectly through their English language proficiency.
- 3.13. Perceived importance of needs regarding involvement in academic activities varies directly by region of origin of foreign students and indirectly through their English language proficiency.
- 3.14. Perceived importance of needs regarding interaction with university faculty members varies directly by region of origin of foreign students and indirectly through their English language proficiency.
- 3.15. Perceived importance of needs regarding involvement in academic activities varies directly by academic level (undergraduate versus graduate) of foreign students and indirectly through their English language proficiency.
- 3.16. Perceived importance of needs regarding interaction with university faculty members varies directly by academic level of foreign students and indirectly through their English language proficiency.
- 3.17. Perceived importance of needs regarding involvement in academic activities varies directly by length of stay in the U.S. of foreign students and indirectly through their English language proficiency.
- 3.18. Perceived importance of needs regarding interaction with university faculty members varies directly by length of stay in the U.S. of foreign students and indirectly through their English language proficiency.

Finally, from General Hypothesis IV, which states that personal characteristics of individuals have a direct influence on satisfaction of needs and an indirect effect on them through language proficiency, the following sub-hypotheses were developed.

Sub-Hypothesis

- 4.1. Perceived satisfaction of needs regarding involvement in academic activities varies directly by field of study of foreign students and indirectly through their English language proficiency.

- 4.2. Perceived satisfaction of needs regarding interaction with university faculty members varies directly by field of study of foreign students and indirectly through their English language proficiency.
- 4.3. Perceived satisfaction of needs regarding involvement in academic activities varies directly by age of foreign students and indirectly through their English language proficiency.
- 4.4. Perceived satisfaction of needs regarding interaction with university faculty members varies directly by age of foreign students and indirectly through their English language proficiency.
- 4.5. Perceived satisfaction of needs regarding involvement in academic activities varies directly by sex of foreign students and indirectly through their English language proficiency.
- 4.6. Perceived satisfaction of needs regarding interaction with university faculty members varies directly by sex of foreign students and indirectly through their English language proficiency.
- 4.7. Perceived satisfaction of needs regarding involvement in academic activities varies directly by marital status of foreign students and indirectly through their English language proficiency.
- 4.8. Perceived satisfaction of needs regarding interaction with university faculty members varies directly by marital status of foreign students and indirectly through their English language proficiency.
- 4.9. Perceived satisfaction of needs regarding involvement in academic activities varies directly by sponsorship of foreign students and indirectly through their English language proficiency.
- 4.10. Perceived satisfaction of needs regarding interaction with university faculty varies directly by sponsorship of foreign students and indirectly through their English language proficiency.
- 4.11. Perceived satisfaction of needs regarding involvement in academic activities varies directly by orientation of foreign students and indirectly through their English language proficiency.

- 4.12. Perceived satisfaction of needs regarding interaction with university faculty varies directly by orientation of foreign students and indirectly through their English language proficiency.
- 4.13. Perceived satisfaction of needs regarding involvement in academic activities varies directly by region of origin of foreign students and indirectly through their English language proficiency.
- 4.14. Perceived satisfaction of needs regarding interaction with university faculty members varies directly by region of origin of foreign students and indirectly through their English language proficiency.
- 4.15. Perceived satisfaction of needs regarding involvement in academic activities varies directly by academic level of foreign students and indirectly through their English language proficiency.
- 4.16. Perceived satisfaction of needs regarding interaction with university faculty members varies directly by academic level of foreign students and indirectly through their English language proficiency.
- 4.17. Perceived satisfaction of needs regarding involvement in academic activities varies directly by length of stay in the U.S. of foreign students and indirectly through their English language proficiency.
- 4.18. Perceived satisfaction of needs regarding interaction with university faculty members varies directly by length of stay in the U.S. of foreign students and indirectly through their English language proficiency.

METHODS

The objectives of this study were: (1) to test the effects of subjective and objective measures of English language proficiency on importance and satisfaction of needs as perceived by foreign students from developing nations and (2) to assess the extent to which various personal variables have a direct influence on importance and satisfaction of needs and an indirect effect on them through language proficiency.

In order to achieve the above objectives, this chapter is devoted to discuss the sample characteristics, data collection procedures, and operationalization of the concepts. Four main sections are discussed in this chapter. The first discusses the sample population. The second deals with the data collection methods used in this study. The third section presents the operational measures of the concepts, and the final section briefly discusses the statistical techniques utilized in order to test the hypotheses.

The Sample

This study is based on a probability sample of foreign students from developing nations attending Iowa State University. The sampling frame included those who were on the Iowa State University list of foreign students as of September, 1977, plus those who arrived in the winter and spring quarters of the 1977-78 academic year, excluding:

- (1) Students who graduated in fall, 1977, through summer, 1978.
- (2) Non-degree students, post-doctoral, and practical trainees.
- (3) All students from developed nations (Canada, Europe, USSR, Hong Kong, Japan, Oceania, Saudi Arabia, and Kuwait).

After eliminating the above students, the sampling frame included the names of 880 students. From this list, a sample of 296 students was selected. Consequently, this population included students from developing nations along with students from Iraq, Libya, and the Republic of China who have been working toward a degree at Iowa State University at least since the beginning of spring quarter, 1978.¹

In drawing the sample, the following guidelines were established:

- (1) Students were stratified by graduate vs. undergraduate statuses.
- (2) Within each stratum, after arranging the students by country, a systematic sample² was drawn at the sampling rate of 2/5 except for students from Iran and the Republic of China. Because of the large number of students from these countries, they were sampled at a half rate (1/5) so that more students could be included from other nations in the sample.³

The total sample consisted of 296 students of which 126 were undergraduates and 170 graduates.

¹Criteria as to which countries were to be included was set by the sponsoring agencies of this project (see Lee et al., 1979).

²For further details on systematic sampling, see, for example, Babbie (1979).

³A SPSS computer program was used to weigh their responses back properly so that they were proportionately represented as far as the data analysis was concerned. For further details of the weighing technique, see Nie et al. (1975).

Data Collection

The questionnaire used to obtain data for this study was developed at Iowa State University by a team of three: Dr. M. Y. Lee, Assistant Professor in the Department of Sociology, Dr. Mokhtar Abd-Ella, University of Tanta, Kafr-El-Sheikh, Egypt, and myself in 1979 (Lee *et al.*, 1979). This questionnaire was designed (1) to identify the needs of foreign students from developing nations from the viewpoint of the students, (2) to determine the extent those identified needs were being met, and (3) to identify the personal characteristics of individuals which were related to different needs as well as the different degrees to which the needs were being met.¹

Two methods were used to collect data in fall, 1978: mail questionnaires and group interviews. A mail questionnaire containing closed-ended, precoded questions on needs and other relevant personal characteristics was used in both methods. Each respondent in group interviews completed the questionnaire in the presence of the research team. Mail questionnaires were self-administered. The frequency of contact included four stages for mail questionnaire and two for group interviews. The returns were 125 for the mail questionnaire (60%) and 70 for group interviews (40%)², totalling

¹The proposed questionnaire covers a broad area of need categories suggested by the literature, interviews with experienced staff members at Iowa State University, NAFSA conference, June, 1978, and materials provided by the Advisory Panel (Lee *et al.*, 1979). For the purpose of this study, only those items of the questionnaire found to be statistically and substantially related to the objectives of this thesis were used.

²This low response rate for group interviews might be attributed to the fact that they were held outside of regular class hours and inconvenient for some respondents to attend.

195 useable returns.¹

The purpose of these two methods was to determine which approach would be most effective for a national survey to assess the needs of foreign students. The primary functions of the group interviews were (1) to answer any question students might have concerning the questionnaire, (2) to determine their preference of scales (3, 5, or 7 values to choose from), (3) to consider suggestions made by the students, and (4) to examine the return rates (60% for mail questionnaire with four contacts and 40% for group interviews with two contacts).²

For the purpose of this study, the method of data collection will be undifferentiated.³

Operationalization

English proficiency

English language proficiency will be examined in two ways, objective and subjective measures. In measuring English proficiency, the number of different instruments is large, depending on the university of attendance for the foreign student. For example, in this study, the instrument or test used to measure objective English proficiency of

¹For one particular measure, that of objective English, data were not available for all the respondents. Therefore, whenever the analysis involves the objective measure of English proficiency, the sample size was reduced to 113.

²In view of the fact that very few questions were raised during the interviews, the return rate of mail questionnaires was judged to be satisfactory, and the difference in cost and convenience was substantial between the two approaches, the research team recommended that the questionnaire be mailed for the national survey. For further details, see Lee *et al.*, 1979.

³Examination of returned questionnaires by the research team showed no significant difference between the two data collection methods with regard to responses.

foreign students is unique to Iowa State University, and therefore the results cannot be generalized to other colleges and universities.

Self-perceived proficiency is also thought to be unreliable for an accurate account of English proficiency, the reasons being that students may score themselves high on English because it is desirable for the parties involved and not because he or she speaks the second language well. Conversely, the students may score themselves lower than what is appropriate simply because they do not communicate very often with members of the host culture. Due to these discrepancies, it is deemed necessary to determine both aspects of English proficiency.

Subjective English measure For self-evaluation of English proficiency, students were asked to circle one number to show how good their English was in each of the skills listed below. A scale numbered from 1 to 7 was presented, with 1 indicating that they were very poor in the skill, 4 for neither poor nor good, and 7 for very good. A composite score was developed by summing the individual scores for all the seven items. This composite will be labeled as the subjective English proficiency score in the remaining part of this thesis.

For this score, the highest total score that could be obtained, then, was 49, indicating that the student felt very competent in each skill. Conversely, the lowest score obtainable was 7, indicating that the student felt very incompetent in each skill. A reliability coefficient was obtained for the subjective English score (0.88893).¹ The skill items included in this composite score were:

¹Cronbach's alpha: for further details, see Hull and Nie, 1979.

- (1) Conversing with faculty members and other students.
- (2) Writing papers, test, etc.
- (3) Participating in class discussions.
- (4) Giving an oral presentation in class.
- (5) Taking class notes.
- (6) Reading (textbooks, journals, etc.).
- (7) Understanding spoken English.

Objective English measure For the objective measure of English proficiency, information was obtained from the Iowa State University English Department. This composite will be labeled as the objective English proficiency score in the remaining part of this thesis. The items included in this score were:

- (1) Writing.
- (2) Listening.
- (3) Vocabulary.
- (4) Structure (grammar).
- (5) Reading.

For each item, a maximum score of 100 could be obtained. For the purpose of this study, the item scores were summed to obtain one total score, the highest total being 500 points.¹

¹ A Pearson correlation coefficient was computed to assess the extent to which objective and subjective measures of English proficiency were related. A correlation coefficient of 0.2257 ($P = 0.008$) was obtained; nevertheless, the correlation was not as high as anticipated.

Importance and satisfaction of needs

In this study, the general level concept of needs is not operationalized by a single statement, but rather by composites which are summations of several scores of individual need items. A number of individual items pertaining to needs of concern in this study were selected from the questionnaire based on substantive consideration. Their importance scores were then analyzed with the use of factor analysis technique¹ to identify their dimensionality.

Needs for involvement in academic activities As a result of factor analysis of selected need items, three items formed the composite to assess importance of need for involvement in academic activities. The reliability measure of the importance score of this composite was 0.753. This composite will be labeled as the importance score for the need for involvement in academic activities in the remaining part of this thesis. Also, these same three items formed the composite to assess the satisfaction of need for involvement in academic activities. The reliability measure for the satisfaction score of this composite was 0.616. This composite will be labeled as the satisfaction score for the need for involvement in academic activities in the remaining part of this thesis. The items included in these composites were:

Need for . . .

- (1) Having an experience of acting as a teaching assistant.
- (2) Having an experience of acting as a research assistant.
- (3) Having opportunities to do some team work with American students.

¹PA2 in Statistical Package for the Social Sciences (Nie et al., 1975) was used.

To the above listed items, each student was asked to circle one number to indicate how important each need item was to him/her by choosing one of the following responses:

<u>Score</u>	<u>Responses</u>
1	Very unimportant
2	Quite unimportant
3	Somewhat unimportant
4	Neither important nor unimportant
5	Somewhat important
6	Quite important
7	Very important

The sum total of the scores of the three items became the importance score for the need for involvement in academic activities. Then, to the same items, each student was asked to circle one number to indicate how much the need was satisfied in his/her case by choosing one of the following responses:

<u>Score</u>	<u>Responses</u>
1	Very unsatisfied
2	Quite unsatisfied
3	Somewhat unsatisfied
4	Neither satisfied nor unsatisfied
5	Somewhat satisfied
6	Quite satisfied
7	Very satisfied

The sum total of the scores of the three items became the satisfaction score for the need for involvement in academic activities.

Needs for interaction with university faculty members As a result of the factor analysis of selected items, seven items formed the composite to assess importance of need for interaction with university faculty members. The reliability measure of the importance score of this composite was 0.8708. This composite will be labeled as the importance score for the need for interaction with university

faculty members in the remaining part of this thesis. Also, these same seven items formed the composite to assess the satisfaction of need for interaction with university faculty members. The reliability measure for the satisfaction score of this composite was 0.79834.

This composite will be labeled as the satisfaction score for the need for interaction with university faculty members in the remaining part of this thesis. The items included in these composites were:

Need for . . .

- (1) Having a good relationship with your advisor.
- (2) Having good relationships with the degree program committee members.
- (3) Having good relationships with course instructors.
- (4) Having a good relationship with your foreign student advisor.
- (5) Getting adequate advice from the academic advisor.
- (6) Getting adequate advice from the foreign student advisor.
- (7) Opportunities to discuss course work with faculty members.

With the above seven items, the importance score and the satisfaction score for each respondent were obtained in the same manner as presented previously for the importance and satisfaction scores of need for involvement in academic activities.

An intercorrelation matrix for the importance of individual need items of each composite is given in Table 1, which suggests that the various measures are discriminating among the concepts (Bohrnstedt, 1969).

The intra-composite item correlations (A area in Table 1) for the need for involvement and those for the need for interaction are overall

higher than the inter-composite item correlations (B area in Table 1) for the two composites.

Table 1. Intercorrelation matrix for the importance of individual need items

Items in the importance composite for the need for involvement			Items in the importance composite for the need for interaction						
1	2	3	1	2	3	4	5	6	7
1									
2	0.587								
3	0.512	0.410							
1	0.211	0.194	0.242						
2	0.319	0.281	0.256	0.606					
3	0.186	0.125	0.195	0.456	0.594				
4	0.204	0.205	0.200	0.504	0.635	0.467			
5	0.226	0.215	0.079	0.471	0.434	0.421	0.672		
6	0.390	0.238	0.358	0.448	0.461	0.383	0.546	0.505	
7	0.174	0.088	0.300	0.464	0.442	0.582	0.482	0.419	0.632

Operationalization of personal characteristics

Personal characteristics which were related to differential needs and the extent of satisfaction of these needs were identified in the literature. The following independent variables were selected based on the literature reviewed.¹

¹Grade point average was also explored in relation to subjective and objective English scores. However, only a brief discussion is devoted to this relationship, since GPA was not chosen to be one of the variables of interest for this study. Discussion on GPA and English proficiency can be found in Appendix A.

Age The question asked was "What was your age on your last birthday?" The actual response in years was used for the measure of age.

Sex The question asked was "What is your sex? Circle one number." Female was coded as 1 and male as 2.

Marital status The question asked was "What is your marital status?" The value of 1 was assigned for single and 2 for married students. A small number of respondents chose the value of 3 to indicate "other" for marital status. However, due to the extremely small number of cases in this category, they were regarded as missing data for the analysis. Comparisons were made only between those who were married and those who were single.

Academic level The question asked was "What is your present university classification?" The value of 1 was assigned for undergraduate students and 2 for graduate students.

Length of stay in the U.S. The question asked was "How long have you been in the United States? Please enter the total months of stay if this is not the first time you have been in the U.S." The actual response in months was used for the measure of length of stay in the U.S.

Orientation Students were asked to indicate whether or not they attended orientation at Iowa State University. The value of 1 was assigned for those who did not attend orientation and 2 for those who did.

Field of study Students were asked to identify their area of study by circling one number from a list of 27 majors. Actual field of study given by foreign students was categorized into the following four categories for the purpose of comparison. The value of 1 was assigned for Engineering, 2 for Agriculture, 3 for Physical Sciences, and 4 for Social Sciences and Humanities.

Region of origin Students were asked to circle one number to identify their home country. These countries were categorized into the following regions as given by the sponsoring agency (The Agency for International Development). The values assigned were 1 for Africa, 2 for South and East Asia, 3 for Southwest Asia, and 4 for Latin America.¹

Sponsorship The question asked was "What are the primary sources of your financial support?" For the purpose of comparison, the students' sources of support were categorized into the following two categories, coded as 1 for university non-assistantship and 2 for assistantship.

Empirical hypotheses

With the operational measures presented in the preceding section, the following empirical hypotheses were formulated which will be presented along with the general and sub-hypotheses.

¹Two countries in Europe were considered as developing nations as listed by the sponsoring agency. These were Portugal and Turkey; however, the total number of students in this category was extremely small, therefore, Europe was deleted from the analysis.

- G.H.1. Importance of needs perceived by individuals vary by their language proficiency.
 - S.H.1.1. Foreign students with a better command of English tend to place more importance on the need for involvement in academic activities than those with a poorer command of English.
 - S.H.1.2. Foreign students with a better command of English tend to place more importance on the need for interaction with university faculty members than students with a poorer command of English.
 - E.H.1.1.1. Foreign students with higher objective English proficiency scores tend to have higher importance scores for the need for involvement in academic activities than those with lower objective English proficiency scores.
 - E.H.1.1.2. Foreign students with higher subjective English proficiency scores tend to have higher importance scores for the need for involvement in academic activities than those with lower subjective English proficiency scores.
 - E.H.1.2.1. Foreign students with higher objective English proficiency scores tend to have higher importance scores for the need for interaction with university faculty members than those with lower objective English proficiency scores.
 - E.H.1.2.2. Foreign students with higher subjective English proficiency scores tend to have higher importance scores for the need for interaction with university faculty members than those with lower subjective English proficiency scores.
- G.H.2. Satisfaction of needs perceived by individuals vary by their language proficiency.
 - S.H.2.1. Foreign students with a better command of English tend to feel more satisfied with the need for involvement in academic activities than those with a poorer command of English.

- S.H.2.2. Foreign students with a better command of English tend to feel more satisfied with the need for interaction with university faculty members than those with a poorer command of English.
 - E.H.2.1.1. Foreign students with higher objective English proficiency scores tend to have higher satisfaction scores for the need for involvement in academic activities than those with lower objective English proficiency scores.
 - E.H.2.1.2. Foreign students with higher subjective English proficiency scores tend to have higher satisfaction scores for the need for involvement in academic activities than those with lower subjective English proficiency scores.
 - E.H.2.2.1. Foreign students with higher objective English proficiency scores tend to have higher satisfaction scores for the need for interaction with university faculty members than those with lower objective English proficiency scores.
 - E.H.2.2.2. Foreign students with higher subjective English proficiency scores tend to have higher satisfaction scores for the need for interaction with university faculty members than those with lower subjective English proficiency scores.
- G.H.3. Personal characteristics of individuals have a direct influence on importance of needs and an indirect effect on them through their language proficiency.
 - S.H.3.1. Perceived importance of needs regarding involvement in academic activities varies directly by field of study of foreign students and indirectly through their English language proficiency.
 - S.H.3.2. Perceived importance of needs regarding interaction with university faculty members varies directly by field of study of foreign students and indirectly through their English language proficiency.
 - S.H.3.3. Perceived importance of needs regarding involvement in academic activities varies directly by age of foreign students and indirectly through their English language proficiency.

- S.H.3.4. Perceived importance of needs regarding interaction with university faculty members varies directly by age of foreign students and indirectly through their English language proficiency.
- S.H.3.5. Perceived importance of needs regarding involvement of academic activities varies directly by sex of foreign students and indirectly through their English language proficiency.
- S.H.3.6. Perceived importance of needs regarding interaction with university faculty members varies directly by sex of foreign students and indirectly through their English language proficiency.
- S.H.3.7. Perceived importance of needs regarding involvement in academic activities varies directly by marital status of foreign students and indirectly through their English language proficiency.
- S.H.3.8. Perceived importance of needs regarding interaction with university faculty members varies directly by marital status of foreign students and indirectly through their English language proficiency.
- S.H.3.9. Perceived importance of needs regarding involvement in academic activities varies directly by sponsorship of foreign students and indirectly through their English language proficiency.
- S.H.3.10. Perceived importance of needs regarding interaction with university faculty members varies directly by sponsorship of foreign students and indirectly through their English language proficiency.
- S.H.3.11. Perceived importance of needs regarding involvement in academic activities varies directly by orientation of foreign students and indirectly through their English language proficiency.
- S.H.3.12. Perceived importance of needs regarding interaction with university faculty members varies directly by orientation of foreign students and indirectly through their English language proficiency.
- S.H.3.13. Perceived importance of needs regarding involvement in academic activities varies directly by region of origin of foreign students and indirectly through their English language proficiency.

- S.H.3.14. Perceived importance of needs regarding interaction with university faculty members varies directly by region of origin of foreign students and indirectly through their English language proficiency.
- S.H.3.15. Perceived importance of needs regarding involvement in academic activities varies directly by academic level of foreign students and indirectly through their English language proficiency.
- S.H.3.16. Perceived importance of needs regarding interaction with university faculty members varies directly by academic level of foreign students and indirectly through their English language proficiency.
- S.H.3.17. Perceived importance of needs regarding involvement in academic activities varies directly by length of stay in the U.S. of foreign students and indirectly through their English language proficiency.
- S.H.3.18. Perceived importance of needs regarding interaction with university faculty members varies directly by length of stay in the U.S. of foreign students and indirectly through their English language proficiency.
- E.H.3.1.1. Perceived importance of need scores regarding involvement in academic activities varies directly by field of study of foreign students and indirectly through their objective English proficiency scores.
- E.H.3.1.2. Perceived importance of need scores regarding involvement in academic activities varies directly by field of study of foreign students and indirectly through their subjective English proficiency scores.
- E.H.3.2.1. Perceived importance of need scores regarding interaction with university faculty members varies directly by field of study of foreign students and indirectly through their objective English proficiency scores.
- E.H.3.2.2. Perceived importance of need scores regarding interaction with university faculty members varies directly by field of study of foreign students and

indirectly through their subjective English proficiency scores.

- E.H.3.3.1. Perceived importance of need scores regarding involvement in academic activities varies directly by age of foreign students and indirectly through their objective English proficiency scores.
- E.H.3.3.2. Perceived importance of need scores regarding involvement in academic activities varies directly by age of foreign students and indirectly through their subjective English proficiency scores.
- E.H.3.4.1. Perceived importance of need scores regarding interaction with university faculty members varies directly by age of foreign students and indirectly through their objective English proficiency scores.
- E.H.3.4.2. Perceived importance of need scores regarding interaction with university faculty members varies directly by age of foreign students and indirectly through their subjective English proficiency scores.
- E.H.3.5.1. Perceived importance of need scores regarding involvement in academic activities varies directly by sex of foreign students and indirectly through their objective English proficiency scores.
- E.H.3.5.2. Perceived importance of need scores regarding involvement in academic activities varies directly by sex of foreign students and indirectly through their subjective English proficiency scores.
- E.H.3.6.1. Perceived importance of need scores regarding interaction with university faculty members varies directly by sex of foreign students and indirectly through their objective English proficiency scores.

- E.H.3.6.2. Perceived importance of need scores regarding interaction with university faculty members varies directly by sex of foreign students and indirectly through their subjective English proficiency scores.
- E.H.3.7.1. Perceived importance of need scores regarding involvement in academic activities varies directly by marital status of foreign students and indirectly through their objective English proficiency scores.
- E.H.3.7.2. Perceived importance of need scores regarding involvement in academic activities varies directly by marital status of foreign students and indirectly through their subjective English proficiency scores.
- E.H.3.8.1. Perceived importance of need scores regarding interaction with university faculty members varies directly by marital status of foreign students and indirectly through their objective English proficiency scores.
- E.H.3.8.2. Perceived importance of need scores regarding interaction with university faculty members varies directly by marital status of foreign students and indirectly through their subjective English proficiency scores.
- E.H.3.9.1. Perceived importance of need scores regarding involvement in academic activities varies directly by sponsorship of foreign students and indirectly through their objective English proficiency scores.
- E.H.3.9.2. Perceived importance of need scores regarding involvement in academic activities varies directly by sponsorship of foreign students and indirectly through their subjective English proficiency scores.

- E.H.3.10.1. Perceived importance of need scores regarding interaction with university faculty members varies directly by sponsorship of foreign students and indirectly through their objective English proficiency scores.
- E.H.3.10.2. Perceived importance of need scores regarding interaction with university faculty members varies directly by sponsorship of foreign students and indirectly through their subjective English proficiency scores.
- E.H.3.11.1. Perceived importance of need scores regarding involvement in academic activities varies directly by orientation of foreign students and indirectly through their objective English proficiency scores.
- E.H.3.11.2. Perceived importance of need scores regarding involvement in academic activities varies directly by orientation of foreign students and indirectly through their subjective English proficiency scores.
- E.H.3.12.1. Perceived importance of need scores regarding interaction with university faculty members varies directly by orientation of foreign students and indirectly through their objective English proficiency scores.
- E.H.3.12.2. Perceived importance of need scores regarding interaction with university faculty members varies directly by orientation of foreign students and indirectly through their subjective English proficiency scores.
- E.H.3.13.1. Perceived importance of need scores regarding involvement in academic activities varies directly by region of origin of foreign students and indirectly through their objective English proficiency scores.

- E.H.3.13.2. Perceived importance of need scores regarding involvement in academic activities varies directly by region of origin of foreign students and indirectly through their subjective English proficiency scores.
- E.H.3.14.1. Perceived importance of need scores regarding interaction with university faculty members varies directly by region of origin of foreign students and indirectly through their objective English proficiency scores.
- E.H.3.14.2. Perceived importance of need scores regarding interaction with university faculty members varies directly by region of origin of foreign students and indirectly through their subjective English proficiency scores.
- E.H.3.15.1. Perceived importance of need scores regarding involvement in academic activities varies directly by academic level of foreign students and indirectly through their objective English proficiency scores.
- E.H.3.15.2. Perceived importance of need scores regarding involvement in academic activities varies directly by academic level and indirectly through their subjective English proficiency scores.
- E.H.3.16.1. Perceived importance of need scores regarding interaction with university faculty members varies directly by academic level and indirectly through their objective English proficiency scores.
- E.H.3.16.2. Perceived importance of need scores regarding interaction with university faculty members varies directly by academic level and indirectly through their subjective English proficiency scores.
- E.H.3.17.1. Perceived importance of need scores regarding involvement in academic activities varies directly by length of stay in the U.S. of foreign students

and indirectly through their objective English proficiency scores.

E.H.3.17.2. Perceived importance of need scores regarding involvement in academic activities varies directly by length of stay in the U.S. of foreign students and indirectly through their subjective English proficiency scores.

E.H.3.18.1. Perceived importance of need scores regarding interaction with university faculty members varies directly by length of stay in the U.S. of foreign students and indirectly through their objective English proficiency scores.

E.H.3.18.2. Perceived importance of need scores regarding interaction with university faculty members varies directly by length of stay in the U.S. of foreign students and indirectly through their subjective English proficiency scores.

G.H.4. Personal characteristics of individuals have a direct influence on satisfaction of needs and an indirect effect on them through their language proficiency.

S.H.4.1. Perceived satisfaction of needs regarding involvement in academic activities varies directly by field of study of foreign students and indirectly through their English language proficiency.

S.H.4.2. Perceived satisfaction of needs regarding interaction with university faculty members varies directly by field of study of foreign students and indirectly through their English language proficiency.

S.H.4.3. Perceived satisfaction of needs regarding involvement in academic activities varies directly by age of foreign students and indirectly through their English language proficiency.

S.H.4.4. Perceived satisfaction of needs regarding interaction with university faculty members varies directly by age of foreign students and indirectly through their English language proficiency.

S.H.4.5. Perceived satisfaction of needs regarding involvement in academic activities varies directly by sex of

foreign students and indirectly through their English language proficiency.

- S.H.4.6. Perceived satisfaction of needs regarding interaction with university faculty members varies directly by sex of foreign students and indirectly through their English language proficiency.
- S.H.4.7. Perceived satisfaction of needs regarding involvement in academic activities varies directly by marital status of foreign students and indirectly through their English language proficiency.
- S.H.4.8. Perceived satisfaction of needs regarding interaction with university faculty members varies directly by marital status of foreign students and indirectly through their English language proficiency.
- S.H.4.9. Perceived satisfaction of needs regarding involvement in academic activities varies directly by sponsorship of foreign students and indirectly through their English language proficiency.
- S.H.4.10. Perceived satisfaction of needs regarding interaction with university faculty varies directly by sponsorship of foreign students and indirectly through their English language proficiency.
- S.H.4.11. Perceived satisfaction of needs regarding involvement in academic activities varies directly by orientation of foreign students and indirectly through their English language proficiency.
- S.H.4.12. Perceived satisfaction of needs regarding interaction with university faculty varies directly by orientation of foreign students and indirectly through their English language proficiency.
- S.H.4.13. Perceived satisfaction of needs regarding involvement in academic activities varies directly by region of origin of foreign students and indirectly through their English language proficiency.
- S.H.4.14. Perceived satisfaction of needs regarding interaction with university faculty members varies directly by region of origin of foreign students and indirectly through their English language proficiency.

- S.H.4.15. Perceived satisfaction of needs regarding involvement in academic activities varies directly by academic level of foreign students and indirectly through their English language proficiency.
- S.H.4.16. Perceived satisfaction of needs regarding interaction with university faculty members varies directly by academic level of foreign students and indirectly through their English language proficiency.
- S.H.4.17. Perceived satisfaction of needs regarding involvement in academic activities varies directly by length of stay in the U.S. of foreign students and indirectly through their English language proficiency.
- S.H.4.18. Perceived satisfaction of needs regarding interaction with university faculty members varies directly by length of stay in the U.S. of foreign students and indirectly through their English language proficiency.
- E.H.4.1.1. Perceived satisfaction of need scores regarding involvement in academic activities varies directly by field of study of foreign students and indirectly through their objective English proficiency scores.
- E.H.4.1.2. Perceived satisfaction of need scores regarding involvement in academic activities varies directly by field of study of foreign students and indirectly through their subjective English proficiency scores.
- E.H.4.2.1. Perceived satisfaction of need scores regarding interaction with university faculty members varies directly by field of study of foreign students and indirectly through their objective English proficiency scores.
- E.H.4.2.2. Perceived satisfaction of need scores regarding interaction with university faculty members varies directly by field of study of foreign students and indirectly through their subjective English proficiency scores.

- E.H.4.3.1. Perceived satisfaction of need scores regarding involvement in academic activities varies directly by age of foreign students and indirectly through their objective English proficiency scores.
- E.H.4.3.2. Perceived satisfaction of need scores regarding involvement in academic activities varies directly by age of foreign students and indirectly through their subjective English proficiency scores.
- E.H.4.4.1. Perceived satisfaction of need scores regarding interaction with university faculty members varies directly by age of foreign students and indirectly through their objective English proficiency scores.
- E.H.4.4.2. Perceived satisfaction of need scores regarding interaction with university faculty members varies directly by age of foreign students and indirectly through their subjective English proficiency scores.
- E.H.4.5.1. Perceived satisfaction of need scores regarding involvement in academic activities varies directly by sex of foreign students and indirectly through their objective English proficiency scores.
- E.H.4.5.2. Perceived satisfaction of need scores regarding involvement in academic activities varies directly by sex of foreign students and indirectly through their subjective English proficiency scores.
- E.H.4.6.1. Perceived satisfaction of need scores regarding interaction with university faculty members varies directly by sex of foreign students and indirectly through their objective English proficiency scores.

- E.H.4.6.2. Perceived satisfaction of need scores regarding interaction with university faculty members varies directly by sex of foreign students and indirectly through their subjective English proficiency scores.
- E.H.4.7.1. Perceived satisfaction of need scores regarding involvement in academic activities varies directly by marital status of foreign students and indirectly through their objective English proficiency scores.
- E.H.4.7.2. Perceived satisfaction of need scores regarding involvement in academic activities varies directly by marital status of foreign students and indirectly through their subjective English proficiency scores.
- E.H.4.8.1. Perceived satisfaction of need scores regarding interaction with university faculty members varies directly by marital status of foreign students and indirectly through their objective English proficiency scores.
- E.H.4.8.2. Perceived satisfaction of need scores regarding interaction with university faculty members varies directly by marital status of foreign students and indirectly through their subjective English proficiency scores.
- E.H.4.9.1. Perceived satisfaction of need scores regarding involvement in academic activities varies directly by sponsorship of foreign students and indirectly through their objective English proficiency scores.
- E.H.4.9.2. Perceived satisfaction of need scores regarding involvement in academic activities varies directly by sponsorship of foreign students and indirectly through their subjective English proficiency scores.

- E.H.4.10.1. Perceived satisfaction of need scores regarding interaction with university faculty members varies directly by sponsorship of foreign students and indirectly through their objective English proficiency scores.
- E.H.4.10.2. Perceived satisfaction of need scores regarding interaction with university faculty members varies directly by sponsorship of foreign students and indirectly through their subjective English proficiency scores.
- E.H.4.11.1. Perceived satisfaction of need scores regarding involvement in academic activities varies directly by orientation of foreign students and indirectly through their objective English proficiency scores.
- E.H.4.11.2. Perceived satisfaction of need scores regarding involvement in academic activities varies directly by orientation of foreign students and indirectly through their subjective English proficiency scores.
- E.H.4.12.1. Perceived satisfaction of need scores regarding interaction with university faculty members varies directly by orientation of foreign students and indirectly through their objective English proficiency scores.
- E.H.4.12.2. Perceived satisfaction of need scores regarding interaction with university faculty members varies directly by orientation of foreign students and indirectly through their subjective English proficiency scores.
- E.H.4.13.1. Perceived satisfaction of need scores regarding involvement in academic activities varies directly by region of origin of foreign students and indirectly through their objective English proficiency scores.

- E.H.4.13.2. Perceived satisfaction of need scores regarding involvement in academic activities varies directly by region of origin of foreign students and indirectly through their subjective English proficiency scores.
- E.H.4.14.1. Perceived satisfaction of need scores regarding interaction with university faculty members varies directly by region of origin of foreign students and indirectly through their objective English proficiency scores.
- E.H.4.14.2. Perceived satisfaction of need scores regarding interaction with university faculty members varies directly by region of origin of foreign students and indirectly through their subjective English proficiency scores.
- E.H.4.15.1. Perceived satisfaction of need scores regarding involvement in academic activities varies directly by academic level of foreign students and indirectly through their objective English proficiency scores.
- E.H.4.15.2. Perceived satisfaction of need scores regarding involvement in academic activities varies directly by academic level and indirectly through their subjective English proficiency scores.
- E.H.4.16.1. Perceived satisfaction of need scores regarding interaction with university faculty members varies directly by academic level and indirectly through their objective English proficiency scores.
- E.H.4.16.2. Perceived satisfaction of need scores regarding interaction with university faculty members varies directly by academic level and indirectly through their subjective English proficiency scores.

- E.H.4.17.1. Perceived satisfaction of need scores regarding involvement in academic activities varies directly by length of stay in the U.S. of foreign students and indirectly through their objective English proficiency scores.
- E.H.4.17.2. Perceived satisfaction of need scores regarding involvement in academic activities varies directly by length of stay in the U.S. of foreign students and indirectly through their subjective English proficiency scores.
- E.H.4.18.1. Perceived satisfaction of need scores regarding interaction with university faculty members varies directly by length of stay in the U.S. of foreign students and indirectly through their objective English proficiency scores.
- E.H.4.18.2. Perceived satisfaction of need scores regarding interaction with university faculty members varies directly by length of stay in the U.S. of foreign students and indirectly through their subjective English proficiency scores.

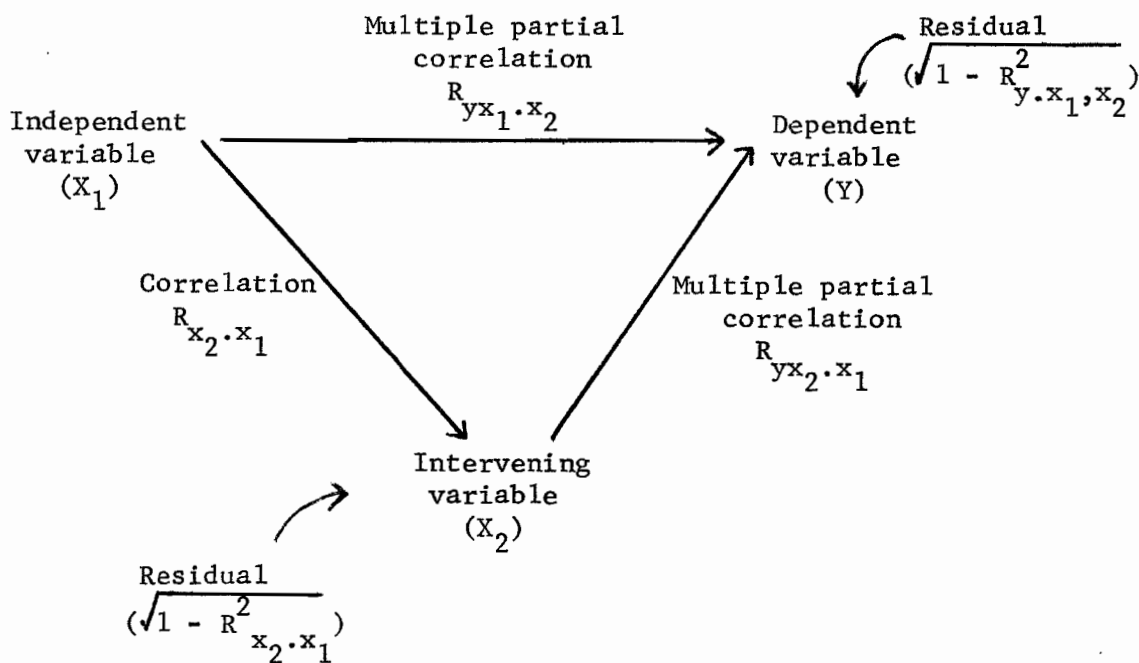
Statistical Techniques Utilized

In the previous sections of this chapter, the sample characteristics and the operational measures were discussed. In this section, the statistical techniques that have been utilized to test the generated hypotheses will be presented. In order to achieve this latter objective, it is necessary to select statistical tests that reveal the degree of association between the measures of English language proficiency, related personal variables (sex, age, length of stay, etc.), and the perceived importance and satisfaction of selected needs.

Pearson correlation coefficients (r) were computed to assess the relationship between each English proficiency score and each importance

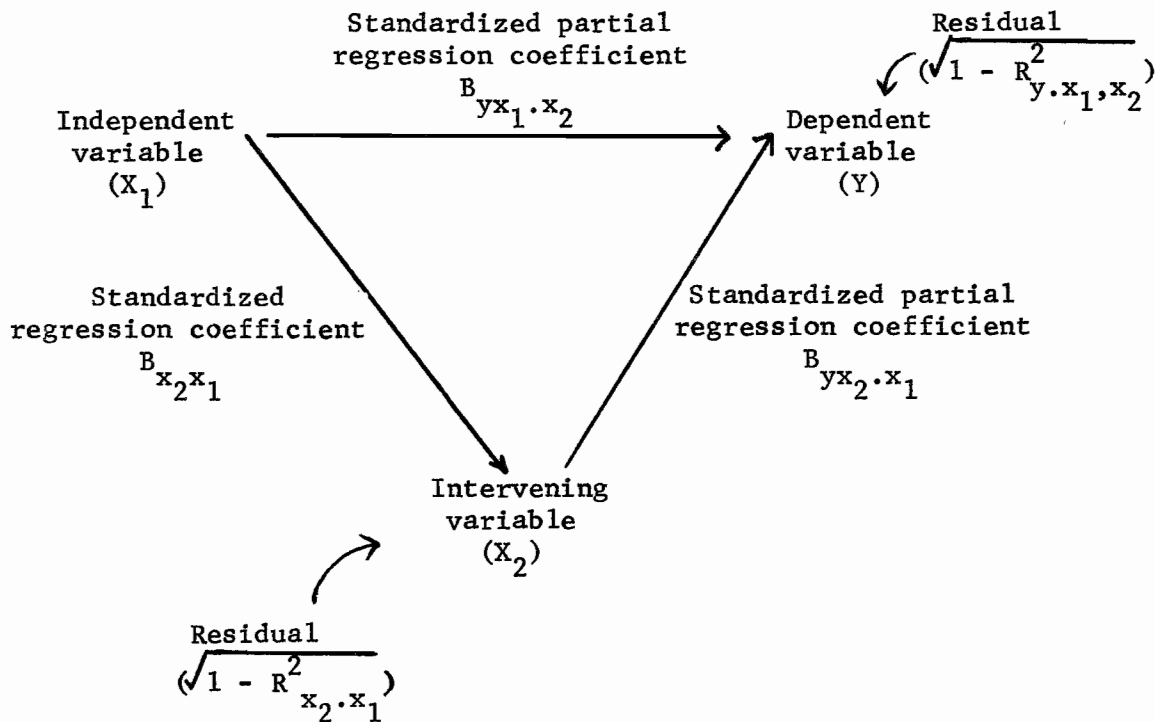
and satisfaction score of need, since these variables were measured on interval scales. The significance of r was assessed to test the hypotheses involving these variables (applicable to Empirical Hypotheses 1.1.1 through 2.2.2).

To test Empirical Hypotheses 3.1.1 through 4.18.2, two different statistical approaches were used. (1) Where a personal characteristic was measured as a categorical or nominal variable, analysis of variance and analysis of covariance were conducted. The statistics designated in the following diagram were computed:¹



¹For the computational formulae, see Cohen and Cohen, 1975.

(2) Where a personal characteristic was measured on an interval or ratio scale, single regression and multiple regression analyses were conducted. Following the conventional path analysis approach, the statistics designated in the following diagram were computed:¹



¹For the computational formulae, see Nie et al., 1975.

FINDINGS

In this chapter, the results of the analysis of data and the statistical tests of the empirical hypotheses for each objective are presented.

Objective I

The first objective of this study was to determine the effect of English language proficiency on perceived importance and satisfaction of selected needs. Objective and subjective English proficiency scores were utilized for this analysis. For Empirical Hypotheses 1.1.1 through 2.2.2, correlation coefficients will be reported with their probability values. In the case of single regression, the correlation coefficient (r) is identical to the standardized regression coefficient (Beta), which is also known as the path coefficient (Nie et al., 1975).

The correlation coefficients were judged to be significant at or beyond the .05 level and considered to support the hypotheses. In this section, only significant values are presented, and the importance score of need for involvement will be coded in the models as C1, the satisfaction score of need for involvement, C2, the importance score of need for interaction, C3, and the satisfaction score of need for interaction, C4. Where an hypothesis was stated with a predicted direction (positive or negative), one-tail test (t-test) was used. Otherwise, two-tail test was used.

E.H.1.1.1. Foreign students with higher objective English proficiency scores tend to have higher importance scores for the need for involvement in academic activities than those with lower objective English scores.

Results: E.H.1.1.1 was not supported at the .05 level of significance.

E.H.1.1.2. Foreign students with higher subjective English proficiency scores tend to have higher importance scores for the need for involvement in academic activities than those with lower subjective English scores.

Results: E.H.1.1.2 was not supported at the .05 level of significance.

E.H.1.2.1. Foreign students with higher objective English proficiency scores tend to have higher importance scores for the need for interaction with university faculty members than those with lower objective English scores.

Results: E.H.1.2.1 was not supported at the .05 level of significance.

E.H.1.2.2. Foreign students with higher subjective English proficiency scores (ES) tend to have higher importance scores for the need for interaction (C3) than those with lower subjective English scores.

$$ES \xrightarrow[r = 0.1286]{(P = 0.028)} C3$$

Results: E.H.1.2.2 was supported. The data suggest that there exists a positive relationship between

subjective English proficiency scores and importance scores for the need for interaction.

E.H.2.1.1. Foreign students with higher objective English proficiency scores tend to have higher satisfaction scores for the need for involvement than those with lower objective English proficiency scores.

Results: E.H.2.1.1 was not supported at the .05 level of significance.

E.H.2.1.2. Foreign students with higher subjective English proficiency scores (ES) tend to have higher satisfaction scores for the need for involvement (C2) than those with lower subjective English proficiency scores.

$$ES \xrightarrow[r = 0.3128]{(P = 0.000)} C2$$

Results: E.H.2.1.2 was supported which suggest that there is a positive relationship between subjective English proficiency and importance of need for involvement.

E.H.2.2.1. Foreign students with higher objective English proficiency scores tend to have higher satisfaction scores for the need for interaction than those with lower objective English proficiency scores.

Results: E.H.2.2.1 was not supported. Instead, there is evidence to indicate a negative relationship exists between objective English proficiency and importance of need for interaction ($r = -0.2089$).

A discussion on this finding will follow the results of hypotheses for Objective I.

E.H.2.2.2. Foreign students with higher subjective English proficiency scores (ES) tend to have higher satisfaction scores for the need for interaction (C4) than those with lower subjective English proficiency scores.

$$ES \xrightarrow[r = 0.2163]{(P = 0.0005)} C4$$

Results: E.H.2.2.2 was supported which suggest that there is a positive relationship between subjective English proficiency and satisfaction of need for interaction.

Discussion of English proficiency

Subjective English proficiency, as predicted, was significantly related to satisfaction of needs regarding involvement in academic activities and satisfaction of needs regarding interaction with faculty members ($P < 0.01$). Importance of need for interaction was also significantly related to subjective English proficiency ($P < 0.05$). One need category, that of importance of need regarding involvement, was not significantly related to subjective English proficiency. These findings suggest that (1) satisfaction of needs for involvement, (2) importance of need for interaction, and (3) satisfaction of need for interaction are positively related to subjective English proficiency.

The data do not include the reasons why the above differences or lack thereof occurred. However, the following possible reasons are considered and need to be investigated in future research.

With regard to subjective English proficiency, students' perception of importance and satisfaction of needs varied significantly. All the significant relationships between need composites and subjective English proficiency were positive. The only relationship which was not statistically significant was that between the importance score of need for involvement in academic activities and subjective English proficiency.

The importance score of need for interaction with faculty members differed significantly by subjective English proficiency. It is conceivable that students who are more confident in their command of English are more likely to have positive attitudes toward interaction with faculty members and therefore placed higher importance on this need composite. It is also possible to think that students competent in English are more likely to receive positive feedback from the faculty. In this sense, the importance of the need for interaction with faculty members (such as having good relationships, getting good advice, and opportunities to discuss coursework) would be influenced by the communication channels received from the faculty. Students with low subjective English proficiency would most likely receive negative feedback from faculty members because of their inability to effectively communicate with them.

Both satisfaction composites were found to have significant positive correlations with subjective English proficiency. For academic activities such as teaching, research, and opportunities to do teamwork, it becomes necessary to communicate effectively with others for satisfaction with these types of activities. Likewise,

satisfaction with the need for interaction would be determined by the reactions of those "others" involved in the interaction and therefore would be higher for students more competent in their English proficiency. From the perspective of the other members involved in this interaction, others may shy away from foreign students who are hard to understand in terms of speaking English.

Objective English proficiency did not have any significant relationships with any of the importance and satisfaction composites. The lack of association can be speculated about as follows. Objective English scores were those obtained when students first arrived at Iowa State University, while the composite scores reflect their perceptions of their needs at the time of data collection. The time gap between these two types of measures could vary from one quarter up to several years among the sample. Objective English scores, therefore, may not reflect accurately the actual objective English proficiency of students at the time data collection of this study took place. On the other hand, subjective English proficiency was the "current" one, when students were contacted by the research team. It can be also speculated that what is relevant in terms of one's assessment of need and satisfaction is indeed one's own assessment of command of English rather than an objective evaluation of such command.

Even though it was not hypothesized, the following relationship warrants additional comments.

A negative correlation coefficient ($r = -0.2089$) was obtained between objective English proficiency scores and satisfaction of need for interaction with faculty members. This is a most interesting

finding, because, according to past literature related to English language proficiency and problems of foreign students, English was found to contribute positively (Nenyod, 1975; Penn and Durham, 1978) or was not related (Wilson, 1976). In contrast, the present finding indicates that although foreign students are competent in their command of English, they are still unsatisfied with needs regarding interaction with university faculty members. It is possible that this finding suggests that students with high English proficiency expect more satisfactory interactions with faculty members and are not getting it.¹

Objective II

The second objective of this thesis was to identify personal characteristics that might be related to importance and satisfaction of selected needs. For the empirical hypotheses with categorical variables such as sex, academic level, and marital status, the analysis of variance and the analysis of covariance were used. Multiple partial correlation coefficients (R) will be reported with their probability values. For the empirical hypotheses with interval variables such as age and length of stay in the U.S., single and multiple regression analyses were conducted. Standardized regression coefficients (beta)

¹The results of Hypotheses 2.2.1 and 2.2.2 would appear to yield the same findings, since (EO) and (ES) were both measures of English proficiency. However, the correlation coefficient for these two measures was not very high ($r = 0.2257$), which indicates that students' self-evaluated English proficiency and their objective English proficiency associated with each other positively only to a small extent (4 percent of variation).

will be reported with their perspective F values. For single regression analyses, correlation coefficients, which are also betas, will be presented with their probability values. The correlation coefficients were judged to be significant at or beyond the .05 level and considered to support the hypotheses. In this section, only the significant values are presented. For purposes of clarity, the empirical hypotheses concerning importance of needs with personal characteristics will be discussed first.

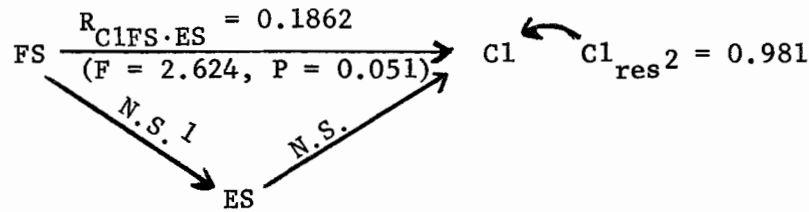
Field of study:

Empirical Hypotheses 3.3.1 through 3.2.2 involve the effects of field of study on perceived importance of needs regarding involvement and interaction with objective and subjective English proficiency.

E.H.3.1.1. Perceived importance of need scores regarding involvement varies directly by field of study of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.3.1.1 was not supported at the .05 level of significance.

E.H.3.1.2. Perceived importance of need scores regarding involvement (C1) varies directly by field of study of foreign students (FS) and indirectly through their subjective English proficiency scores (ES).



Results: E.H.3.1.2 was partially supported which suggests that importance of need scores regarding involvement varies directly by field of study of foreign students when controlling for the subjective English proficiency score.³ Students in social sciences scored the highest importance, physical sciences followed, engineers were next, and agricultural students placed the least importance on this need.

E.H.3.2.1. Perceived importance of need scores regarding interaction varies directly by field of study of foreign students and indirectly through their objective English proficiency scores.

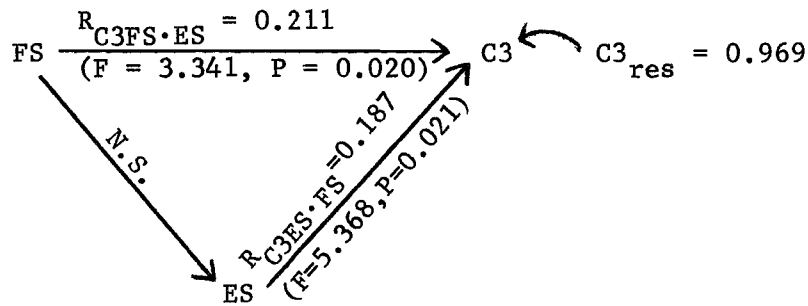
Results: E.H.3.2.1 was not supported at the .05 level of significance.

¹N.S. = Not significant.

²_{res} = residual.

³Option 9 was used in analysis of covariance (Nie et al., 1975).

E.H.3.2.2. Perceived importance of need scores regarding interaction (C3) varies directly by field of study of foreign students (FS) and indirectly through their subjective English proficiency scores (ES).



Results: E.H.3.2.2 was partially supported which suggests that importance of need scores regarding interaction varies directly by field of study of foreign students. Students in the social sciences placed the highest importance, physical sciences followed, engineers were next, and agricultural students placed the least importance on this need. Also, the relationship between subjective English proficiency scores and importance of need for interaction still remained significant when field of study was controlled.¹

None of the hypotheses was fully supported. However, the direct effect of field of study was supported for both importance of need for

¹Subjective English proficiency was significantly related to importance of need for interaction without controlling for a third variable (E.H.1.2.2).

involvement ($R = 0.1862$, $P < 0.05$) and importance of need for interaction ($R = 0.211$, $P < 0.05$) when controlling for the subjective English proficiency score. The indirect effect of field of study through subjective English was insignificant for all the empirical hypotheses.

Age:

Empirical Hypotheses 3.3.1 through 3.4.2 involve the effects of age on importance of needs regarding involvement and importance of needs regarding interaction with objective and subjective English proficiency.

E.H.3.3.1. Perceived importance of need scores regarding involvement varies directly by age of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.3.3.1 was not supported at the .05 level of significance.

E.H.3.3.2. Perceived importance of need scores regarding involvement varies directly by age of foreign students and indirectly through their subjective English proficiency scores.

Results: E.H.3.3.2 was not supported at the .05 level of significance.

E.H.3.4.1. Perceived importance of need scores regarding interaction varies directly by age of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.3.4.1 was not supported at the .05 level of significance.

E.H.3.4.2. Perceived importance of need scores regarding interaction varies directly by age of foreign students and indirectly through their subjective English proficiency scores.

Results: E.H.3.4.2 was not supported at the .05 level of significance.

The direct, as well as the indirect, effects were not supported for this variable.

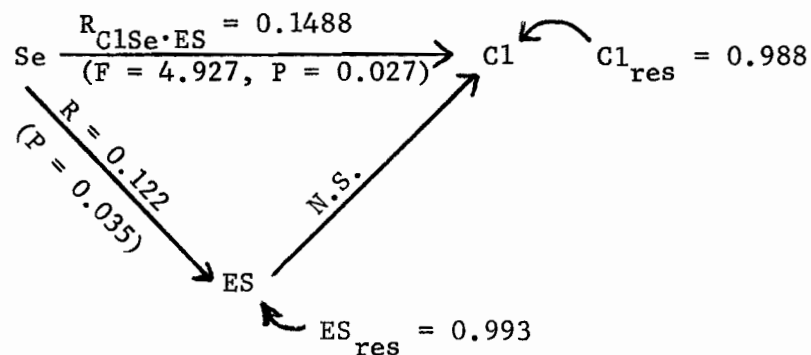
Sex:

Empirical Hypotheses 3.5.1 through 3.6.2 are concerned with the effects of sex on importance of needs regarding involvement and interaction with objective and subjective English proficiency.

E.H.3.5.1. Perceived importance of need scores regarding involvement varies directly by sex of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.3.5.1 was not supported at the .05 level of significance.

E.H.3.5.2. Perceived importance of need scores regarding involvement (C1) varies directly by sex of foreign students (Se) and indirectly through their subjective English proficiency scores (ES).

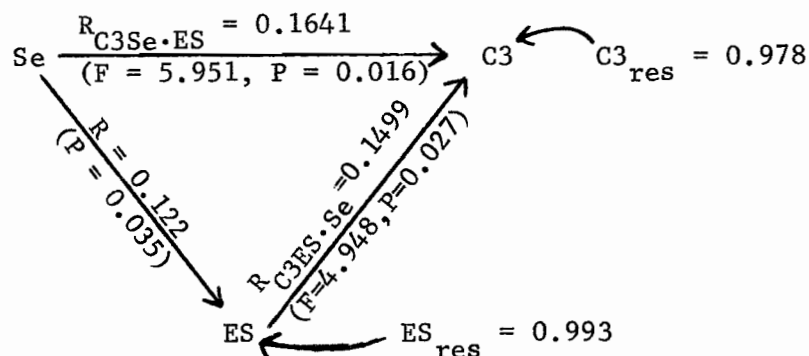


Results: E.H.3.5.2 was partially supported which suggests that importance of need scores regarding involvement varies directly by sex of foreign students controlling for subjective English proficiency. Females placed more importance on this need than males. Likewise, subjective English proficiency scores were related to sex of foreign students even though the indirect effect through subjective English proficiency scores was not significant. In this case, males scored higher on subjective English proficiency than females.

E.H.3.6.1. Perceived importance of need scores regarding interaction varies directly by sex of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.3.6.1 was not supported at the .05 level of significance.

E.H.3.6.2. Perceived importance of need scores regarding interaction (C3) varies directly by sex of foreign students (Se) and indirectly through their subjective English proficiency scores (ES).



Results: E.H.3.6.2 was supported which suggests that importance of need scores regarding interaction varies directly by sex of foreign students and indirectly through their subjective English scores. For this hypothesis, the direct effect (0.1641) is greater than the indirect effect ($R_{ES \cdot Se} \times R_{C3ES \cdot Se} = 0.0183$).

One hypothesis, 3.6.2, was fully supported, suggesting that perceived importance of needs regarding interaction varies directly by sex of foreign students and indirectly through their subjective English proficiency. Another hypothesis (E.H.3.5.2) was partially supported, suggesting that importance of need regarding involvement varies directly by sex of foreign students ($P < 0.05$). For this same hypothesis, there is evidence to support the direct effect of sex on subjective English proficiency ($P < 0.05$) even though the indirect effect of sex through subjective English proficiency on importance of needs regarding involvement was not significant.

Marital status:

Empirical Hypotheses 3.7.1 through 3.8.2 deal with the effect of marital status on importance of needs regarding involvement and interaction with objective and subjective English proficiency.

E.H.3.7.1. Perceived importance of need scores regarding involvement varies directly by marital status of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.3.7.1 was not supported at the .05 level of significance.

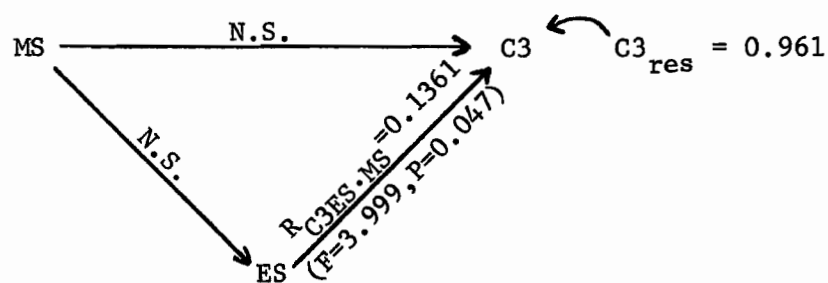
E.H.3.7.2. Perceived importance of need scores regarding involvement varies directly by marital status of foreign students and indirectly through their subjective English proficiency scores.

Results: E.H.3.7.2 was not supported at the .05 level of significance.

E.H.3.8.1. Perceived importance of need scores regarding interaction varies directly by marital status of foreign students and indirectly through their objective English scores.

Results: E.H.3.8.1 was not supported at the .05 level of significance.

E.H.3.8.2. Perceived importance of need scores regarding interaction (C3) varies directly by marital status of foreign students (MS) and indirectly through their subjective English proficiency scores (ES).



Results: E.H.3.8.2 was not supported. Only the direct effect of subjective English proficiency scores was supported, controlling for marital status.

None of the hypotheses was supported for this variable, however, there is evidence to support the direct effect of subjective English proficiency on the importance of needs regarding interaction, controlling for marital status.

Sponsorship:

Empirical Hypotheses 3.9.1 through 3.10.2 involve the effect of sponsorship on importance of needs regarding involvement and interaction with objective and subjective English proficiency.

E.H.3.9.1. Perceived importance of need scores regarding involvement varies directly by sponsorship of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.3.9.1 was not supported at the .05 level of significance.

E.H.3.9.2. Perceived importance of need scores regarding involvement varies directly by sponsorship of foreign students and indirectly through their subjective English proficiency scores.

Results: E.H.3.9.2 was not supported at the .05 level of significance.

E.H.3.10.1. Perceived importance of need scores regarding interaction varies directly by sponsorship of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.3.10.1 was not supported at the .05 level of significance.

E.H.3.10.2. Perceived importance of need scores regarding interaction varies directly by sponsorship of foreign students and indirectly through their subjective English proficiency scores.

Results: E.H.3.10.2 was not supported at the .05 level of significance.

None of the hypotheses was supported for this variable. Equally so, the effects of objective and subjective English proficiency were statistically insignificant.

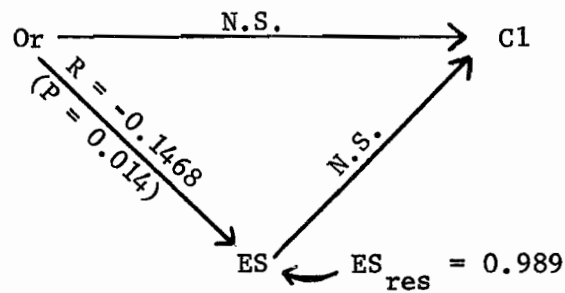
Orientation:

Empirical Hypotheses 3.11.1 through 3.12.2 are concerned with the effect of orientation on importance of needs regarding involvement and interaction with objective and subjective English proficiency.

E.H.3.11.1. Perceived importance of need scores regarding involvement varies directly by orientation of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.3.11.1 was not supported at the .05 level of significance.

E.H.3.11.2. Perceived importance of need scores regarding involvement (C1) varies directly by orientation of foreign students (Or) and indirectly through their subjective English proficiency scores (ES).

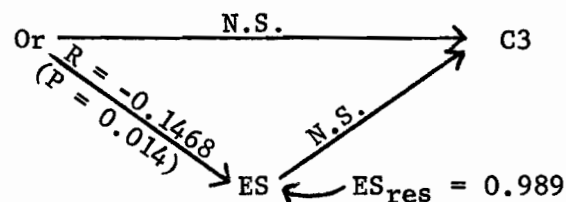


Results: E.H.3.11.2 was not supported at the .05 level of significance. However, there is evidence that suggests there is a relationship between orientation and subjective English proficiency scores. Foreign students who did not attend orientation scored higher on subjective English proficiency than those who did attend.

E.H.3.12.1. Perceived importance of need scores regarding interaction varies directly by orientation of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.3.12.1 was not supported at the .05 level of significance.

E.H.3.12.2. Perceived importance of need scores regarding interaction (C3) varies directly by orientation of foreign students (Or) and indirectly through their subjective English proficiency scores (ES).



Results: E.H.3.12.2 was not supported at the .05 level of significance.

None of the hypotheses was supported for this variable, however, there is evidence to suggest that attending orientation is related to subjective English proficiency ($R = -0.1468$, $P < 0.05$). The negative correlation indicates that students who did not attend orientation tend to have higher subjective English proficiency scores. This finding could suggest that students who feel they are very competent in English also feel they do not have to attend orientation.

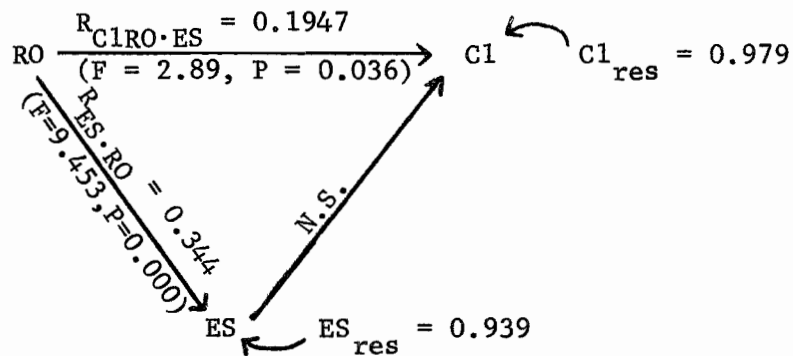
Region of origin:

Empirical Hypotheses 3.13.1 through 3.14.2 deal with the effect of region of origin on importance of needs regarding involvement and interaction with objective and subjective English proficiency.

E.H.3.13.1. Perceived importance of need scores regarding involvement varies directly by region of origin of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.3.13.1 was not supported at the .05 level of significance.

E.H.3.13.2. Perceived importance of need scores regarding involvement (C1) varies directly by region of origin of foreign students (R0) and indirectly through their subjective English proficiency scores (ES).



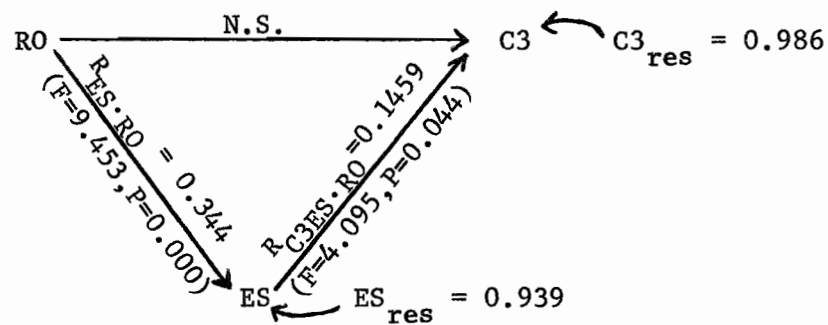
Results: E.H.3.13.2 was partially supported which suggests that importance of need scores regarding involvement varies directly by region of origin of foreign students. Students from Southwest Asia tended to place the highest importance on this need and students from Africa followed them. South and East Asian students were next, and students from Latin America tended to place the least importance on this need. Also, there is evidence to suggest that region of origin of foreign students is related to subjective English proficiency. Students from Africa scored themselves the highest in terms of proficiency in English. Latin American students scored the next highest. South and East Asian students scored the third highest, and Southwest Asian students came in last.

E.H.3.14.1. Perceived importance of need scores regarding interaction varies directly by region of origin of foreign students

and indirectly through their objective English proficiency scores.

Results: E.H.3.14.1 was not supported at the .05 level of significance.

E.H.3.14.2. Perceived importance of need scores regarding interaction (C3) varies directly by region of origin of foreign students (RO) and indirectly through their subjective English proficiency scores (ES).



Results: E.H.3.14.2 was partially supported in terms of the indirect effect of region of origin through subjective English proficiency scores.

While the effects of this variable with objective English proficiency on importance of need for involvement and interaction were insignificant, this was not the case with subjective English proficiency. For Hypothesis 3.13.2, there is evidence to support the direct effect of region of origin on importance of need regarding involvement ($R = 0.194$, $P < 0.05$) even though the indirect effect of region of origin through subjective English proficiency was insignificant. For Hypothesis 3.14.2, there is evidence to support the indirect effect of region of origin

through subjective English proficiency on importance of needs regarding interaction even though the direct effect was not significant.

Academic level:

Empirical Hypotheses 3.15.1 through 3.16.2 involve the effect of academic level on importance of need regarding involvement and interaction with objective and subjective English proficiency.

E.H.3.15.1. Perceived importance of need scores regarding involvement varies directly by academic level of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.3.15.1 was not supported at the .05 level of significance.

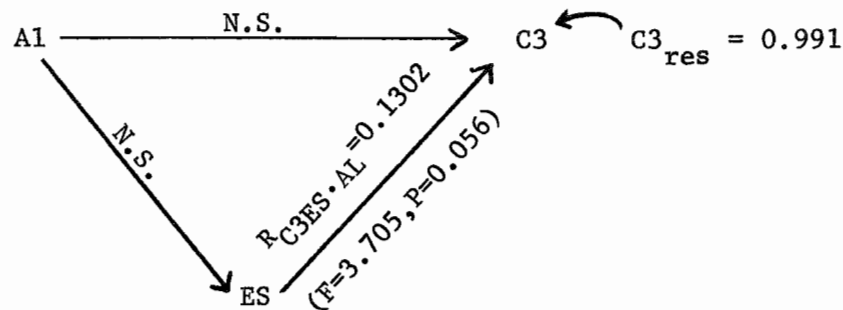
E.H.3.15.2. Perceived importance of need scores regarding involvement varies directly by academic level of foreign students and indirectly through their subjective English proficiency scores.

Results: E.H.3.15.2 was not supported at the .05 level of significance.

E.H.3.16.1. Perceived importance of need scores regarding interaction varies directly by academic level of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.3.16.1 was not supported at the .05 level of significance.

E.H.3.16.2. Perceived importance of need scores regarding interaction (C3) varies directly by academic level of foreign students (AL) and indirectly through their subjective English proficiency scores (ES).



Results: E.H.3.16.2 was not supported, however, there is evidence to show that there was still a relationship between subjective English proficiency scores and importance of need scores regarding interaction when academic level was controlled.

None of the hypotheses was supported for this variable.

Length of stay in the U.S.:

Empirical Hypotheses 3.17.1 through 3.18.2 are concerned with the effect of length of stay in the U.S. on importance of needs regarding involvement and interaction with objective and subjective English proficiency.

E.H.3.17.1. Perceived importance of need scores regarding involvement varies directly by length of stay in the U.S. of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.3.17.1 was not supported at the .05 level of significance.

E.H.3.17.2. Perceived importance of need scores regarding involvement varies directly by length of stay in the U.S. of foreign students and indirectly through their subjective English proficiency scores.

Results: E.H.3.17.2 was not supported at the .05 level of significance.

E.H.3.18.1. Perceived importance of need scores regarding interaction varies directly by length of stay in the U.S. of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.3.18.1 was not supported at the .05 level of significance.

E.H.3.18.2. Perceived importance of need scores regarding interaction varies directly by length of stay in the U.S. of foreign students and indirectly through their subjective English proficiency scores.

Results: E.H.3.18.2 was not supported at the .05 level of significance.

None of the hypotheses was supported for this variable.

Discussion of importance of needs

In all, self-perceived importance of need for involvement and importance of need for interaction were not indirectly related to personal characteristics through English proficiency. For the direct

effect of personal characteristics on importance of needs controlling for English proficiency, only five hypotheses were supported, suggesting that importance of needs regarding involvement and interaction varies directly by field of study, sex, and region of origin of foreign students. For the direct effect of field of study and sex of foreign students, both importance of needs for involvement and importance of need for interaction showed a significant difference between the groups. For the direct effect of region of origin, however, only the importance of need for involvement was supported.

Only one hypothesis was fully supported in terms of the importance of needs (E.H.3.6.2). There is evidence to support the hypothesis that perceived importance of need scores regarding interaction varies directly by sex of foreign students and indirectly through their subjective English proficiency scores. The direct effect of sex appears to have a stronger influence than the indirect effect through subjective English proficiency.

There is evidence to suggest that subjective English proficiency scores and importance of needs for interaction are related when controlling for field of study, marital status, and academic level of foreign students. This appears to be consistent with results of the hypotheses for subjective English proficiency with the importance of need for interaction in Objective I. The influence of field of study, marital status, and academic level, when included in the analysis, does not contribute significantly to account for the variation in the importance of needs for interaction.

There is evidence to support the relationship of various personal characteristics with subjective English proficiency scores, even though the indirect effect of those characteristics was not supported. Subjective English proficiency varied significantly by sex, orientation experience, and region of origin of foreign students.

To restate the above results, for field of study, students in the social sciences and humanities placed the highest importance on the need for involvement, physical sciences followed, and engineers were next. Agricultural students tended to place the least importance on this need. This same trend is apparent for field of study with the importance of need for interaction. For sex of foreign students, females consistently scored higher than males for importance of need for involvement and importance of need for interaction. However, for the relationship of sex with subjective English proficiency, males tended to score higher than females.

For region of origin, students from Southwest Asia placed the highest importance on the need for involvement, African students followed, and South and East Asian students were next. Latin American students tended to place the least importance on this need.

For the relationship of region of origin with subjective English proficiency, students from Africa scored themselves the highest in terms of self-evaluated English proficiency. Latin American students scored the next highest, while South and East Asian students and Southwest Asian students scored themselves the lowest in terms of self-evaluated English proficiency.

Finally, students who did not attend orientation tended to score themselves higher for self-evaluated English proficiency than those who did attend.

The data do not include the reasons why the above differences occurred. However, the following possible reasons can be considered for future research.

Both of the importance scores, need for involvement in academic activities and that for interaction with faculty members differed significantly by some of the personal characteristics, controlling for subjective English proficiency. The difference due to field of study may be because of the emphasis placed on involvement by the respective departments. It is possible that social sciences and humanities departments place more emphasis on such involvement whereas agriculture departments do not.

Differences due to sex and region of origin were also noted. However, the reasons why these differences might have occurred are unclear. More literature research is needed to justify any speculations made on these two variables.

The empirical hypotheses concerning satisfaction of needs will now be presented, and the results of each personal characteristic will be discussed. The arrow between personal characteristics and English proficiency for satisfaction of needs will yield the same results as that of importance of needs and, therefore, will not be discussed again.

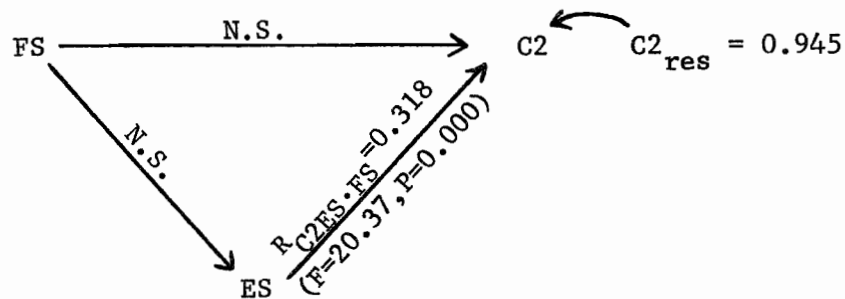
Field of study:

Empirical Hypotheses 4.1.1 through 4.2.2 are concerned with the effect of field of study on perceived satisfaction of need for involvement and on perceived satisfaction of need for interaction with objective and subjective English proficiency.

E.H.4.1.1. Perceived satisfaction of need scores regarding involvement varies directly by field of study of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.4.1.1 was not supported at the .05 level of significance.

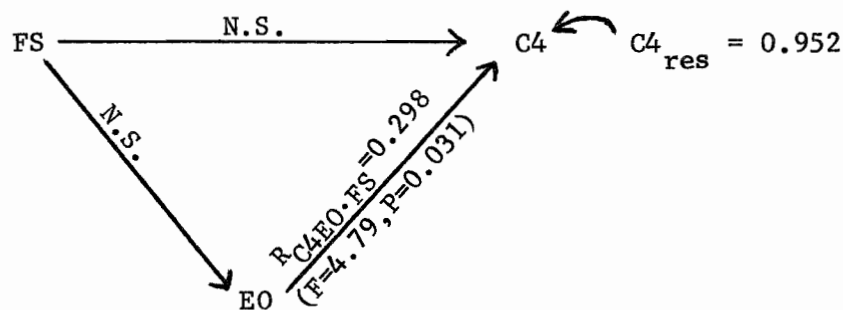
E.H.4.1.2. Perceived satisfaction of need scores regarding involvement (C2) varies directly by field of study of foreign students (FS) and indirectly through their subjective English proficiency scores (ES).



Results: E.H.4.1.2 was not supported at the .05 level of significance. Only satisfaction of need scores regarding involvement varied directly by subjective

English proficiency scores when field of study was controlled.¹

E.H.4.2.1. Perceived satisfaction of need scores regarding interaction (C4) varies directly by field of study of foreign students (FS) and indirectly through their objective English proficiency scores (EO).

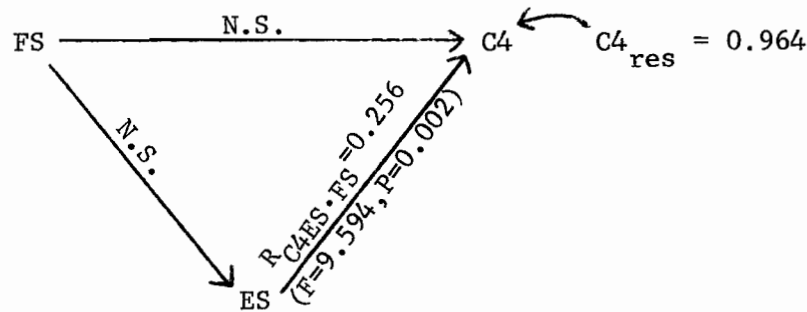


Results: E.H.4.2.1 was not supported. Only satisfaction of needs scores regarding interaction varied directly by objective English proficiency scores even when field of study was controlled.²

E.H.4.2.2. Perceived satisfaction of need scores regarding interaction (C4) varies directly by field of study of foreign students (FS) and indirectly through their subjective English proficiency scores (ES).

¹Subjective English proficiency was significantly related to satisfaction of need for involvement without controlling for a third variable (E.H.2.1.2).

²Objective English proficiency was significantly related to satisfaction of need for interaction without controlling for a third variable (E.H.2.2.1).



Results: E.H.4.2.2 was not supported. Only satisfaction of need scores regarding interaction varied directly by subjective English proficiency even when field of study was controlled.¹

None of the hypotheses was supported for this variable; however, there is evidence to support that subjective English proficiency still has an effect on satisfaction of needs regarding involvement ($R = 0.318$, $P < 0.001$) and on satisfaction of needs regarding interaction ($R = 0.256$, $P < 0.01$) even when field of study was controlled. Also, there is evidence to support that objective English proficiency has an effect on satisfaction of needs regarding interaction ($R = 0.298$, $P < 0.05$), even when field of study was controlled.

Age:

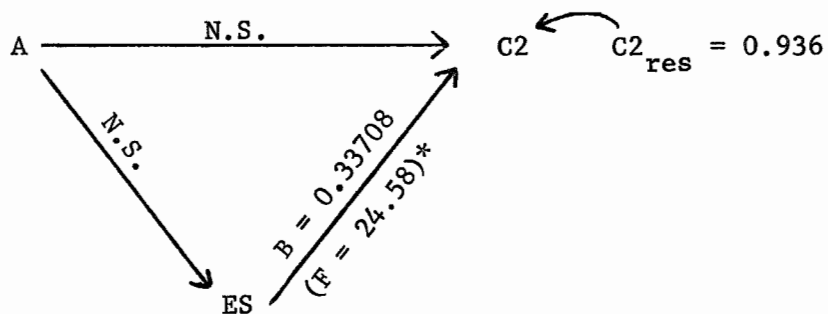
Empirical Hypotheses 4.3.1 through 4.4.2 deal with the effect of age on perceived satisfaction of need for involvement and interaction with objective and subjective English proficiency.

¹Subjective English proficiency was significantly related to satisfaction of need for interaction without controlling for a third variable (E.H.2.2.2).

E.H.4.3.1. Perceived satisfaction of need scores regarding involvement varies directly by age of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.4.3.1 was not supported at the .05 level of significance.

E.H.4.3.2. Perceived satisfaction of need scores regarding involvement (C2) varies directly by age of foreign students (A) and indirectly through their subjective English proficiency scores (ES).



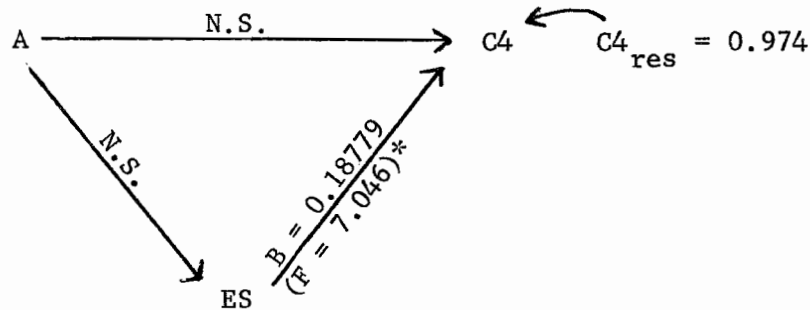
Results: E.H.4.3.2 was not supported. Only satisfaction of need scores regarding interaction varied directly by subjective English proficiency scores when age was controlled.

E.H.4.4.1. Perceived satisfaction of need scores regarding interaction varies directly by age of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.4.4.1 was not supported at the .05 level of significance.

*($P < 0.001$).

E.H.4.4.2. Perceived satisfaction of need scores regarding interaction (C4) varies directly by age of foreign students (A) and indirectly through their subjective English proficiency scores (ES).



Results: E.H.4.4.2 was not supported. Only satisfaction for need scores regarding interaction varied directly by subjective English proficiency scores when age was controlled.

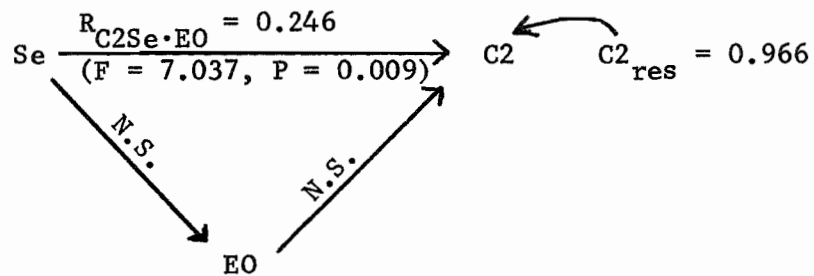
None of the hypotheses was supported for this variable; however, the same results are apparent with subjective English proficiency, as was the case when controlling for field of study. There is evidence to support that subjective English proficiency has a direct effect on perceived satisfaction of needs regarding involvement ($B = 0.3371$) and perceived satisfaction of needs regarding interaction ($B = 0.1878$), when age was controlled.

*($P < 0.01$).

Sex:

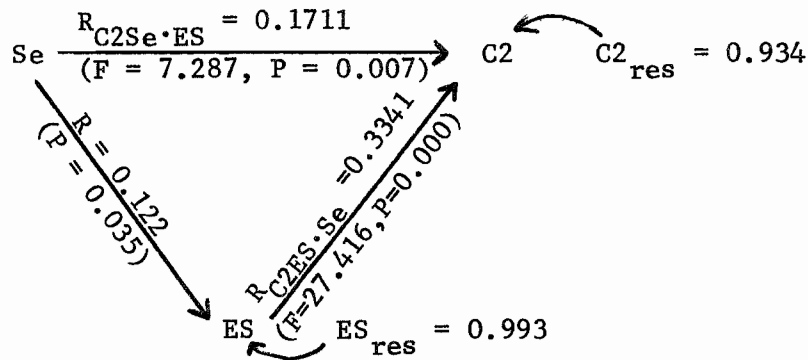
Empirical Hypotheses 4.5.1 through 4.6.2 involve the effect of sex on perceived satisfaction of needs for involvement and interaction with objective and subjective English proficiency.

E.H.4.5.1. Perceived satisfaction of need scores regarding involvement (C2) varies directly by sex of foreign students (Se) and indirectly through their objective English proficiency scores (EO).



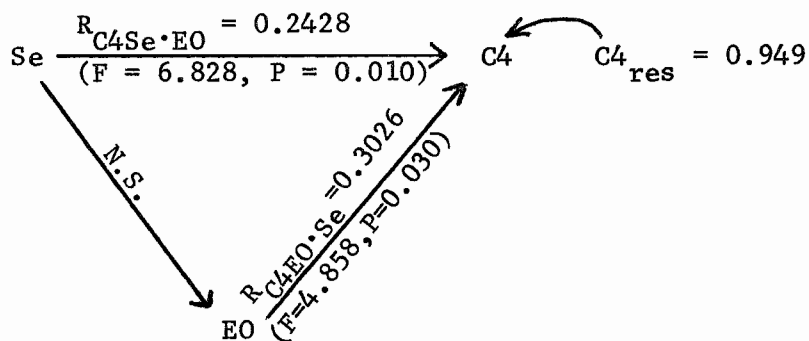
Results: E.H.4.5.1 was partially supported, which suggests that satisfaction of need scores regarding involvement varies directly by sex of foreign students, females scoring significantly higher than males.

E.H.4.5.2. Perceived satisfaction of need scores regarding involvement (C2) varies directly by sex of foreign students (Se) and indirectly through their subjective English proficiency scores (ES).



Results: E.H.4.5.2 was supported, which suggests that satisfaction of need scores regarding involvement varies directly by sex of foreign students and indirectly through their subjective English proficiency scores. For this hypothesis, the direct effect of sex (0.1711) is greater than the indirect effect ($R_{ES \cdot Se} \times R_{C2ES \cdot Se} = 0.0408$).

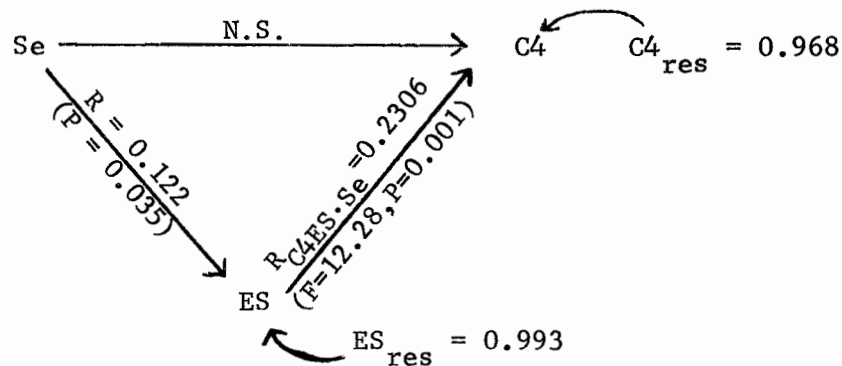
E.H.4.6.1. Perceived satisfaction of need scores regarding interaction (C4) varies directly by sex of foreign students (Se) and indirectly through their objective English proficiency scores (EO).



Results: E.H.4.6.1 was partially supported, which suggests that satisfaction of need scores regarding interaction varies directly by sex of foreign students,

again, females scoring higher than males. The indirect effect was not supported, however, there is evidence to show that a direct relationship exists between satisfaction of need scores regarding interaction and objective English proficiency scores, even when sex is controlled.

E.H.4.6.2. Perceived satisfaction of need scores regarding interaction (C4) varies directly by sex of foreign students (Se) and indirectly through their subjective English proficiency scores (ES).



Results: E.H.4.6.2 was partially supported, which suggests that satisfaction of need scores regarding interaction varies by sex indirectly through their subjective English proficiency scores.

For this personal characteristic, one hypothesis (4.5.2) was fully supported, which suggests that perceived satisfaction of needs regarding involvement varies directly by sex of foreign students and indirectly through their subjective English proficiency. The remaining three hypotheses were partially supported. There is evidence to suggest that sex has a direct effect on perceived satisfaction of needs for

involvement ($P < 0.01$) and a direct effect on perceived satisfaction of needs for interaction ($P < 0.01$). Also, there is evidence to suggest that sex has an indirect effect through subjective English proficiency on perceived satisfaction of needs for interaction. While the indirect effect of sex through objective English proficiency on perceived satisfaction of needs regarding interaction was not supported, there is evidence to suggest that objective English proficiency is directly related to perceived satisfaction of needs regarding interaction ($P < 0.05$), even when sex was controlled.

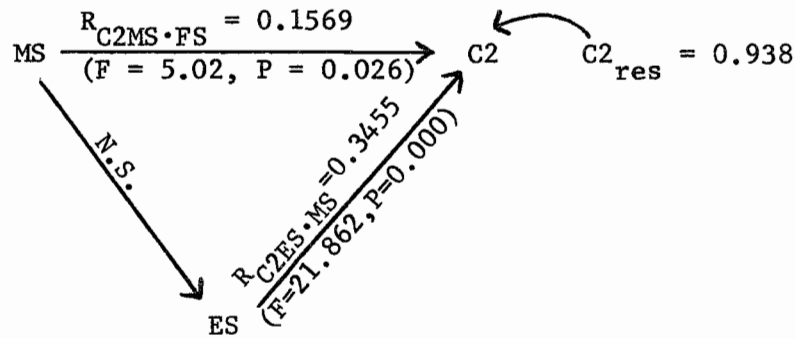
Marital status:

Empirical Hypotheses 4.7.1 through 4.8.2 are concerned with the effect of marital status on perceived satisfaction of needs regarding involvement and interaction with objective and subjective English proficiency.

E.H.4.7.1. Perceived satisfaction of need scores regarding involvement varies directly by marital status of foreign students and indirectly through their objective English proficiency scores.

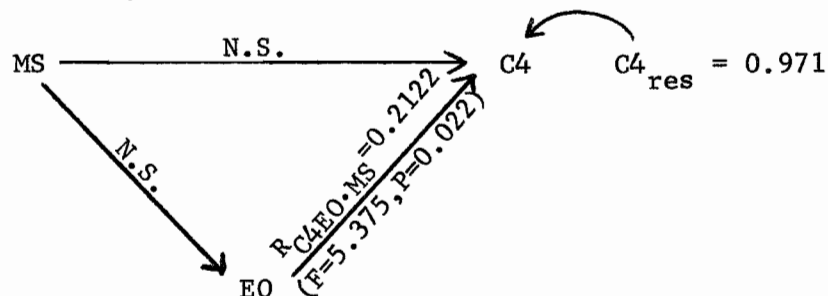
Results: E.H.4.7.1 was not supported at the .05 level of significance.

E.H.4.7.2. Perceived satisfaction of need scores regarding involvement (C2) varies directly by marital status of foreign students (MS) and indirectly through their subjective English proficiency scores (ES).



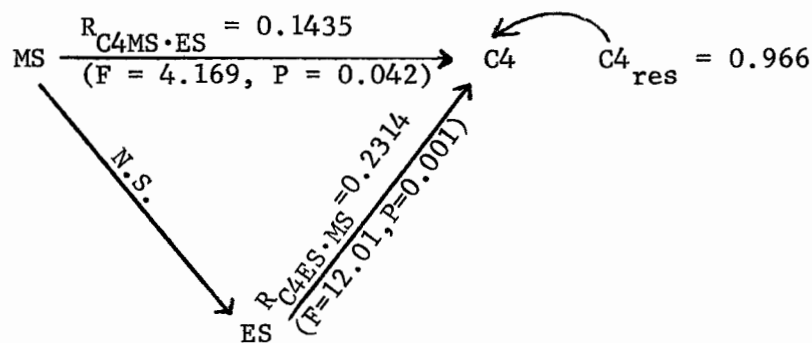
Results: E.H.4.7.2 was partially supported, which suggests that satisfaction of need scores regarding involvement varies directly by marital status of foreign students, single students scoring significantly higher than married students. The indirect effect was not supported, however, there is evidence to show that a direct relationship exists between satisfaction of need scores regarding involvement and subjective English proficiency scores when marital status was controlled.

E.H.4.8.1. Perceived satisfaction of need scores regarding interaction (C4) varies directly by marital status of foreign students (MS) and indirectly through their objective English proficiency scores (EO).



Results: E.H.4.8.1 was not supported. Only satisfaction for need scores regarding interaction varied by objective English proficiency scores when marital status was controlled.

E.H.4.8.2. Perceived satisfaction of need scores regarding interaction (C4) varies directly by marital status of foreign students (MS) and indirectly through their subjective English proficiency scores (ES).



Results: E.H.4.8.2 was partially supported which suggests that satisfaction of need scores regarding interaction varies directly by marital status of foreign students, married students scoring higher than single students. Also, there is evidence to suggest that subjective English proficiency scores are related to satisfaction of need regarding interaction when marital status was controlled.

None of the hypotheses was fully supported for this variable; however, two were partially supported. The direct effect of marital

status on perceived satisfaction of need for involvement was statistically significant ($P < 0.05$), and the direct effect of marital status on perceived satisfaction of needs for interaction was supported ($P < 0.05$). Equally so, the direct effect of subjective English proficiency on satisfaction of needs for involvement ($P < 0.001$) and satisfaction of needs for interaction ($P = 0.001$) was still supported, even when controlling for marital status. Finally, there is evidence to suggest that objective English proficiency is still related to perceived satisfaction of needs for interaction ($P < 0.05$), even when marital status is controlled.

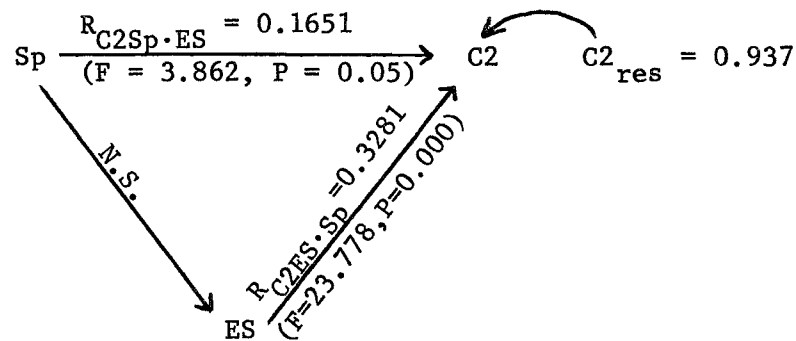
Sponsorship:

Empirical Hypotheses 4.9.1 through 4.10.2 deal with the effect of sponsorship on perceived satisfaction of needs regarding involvement and interaction with objective and subjective English proficiency.

E.H.4.9.1. Perceived satisfaction of need scores regarding involvement varies directly by sponsorship of foreign students and indirectly through their objective English proficiency scores.

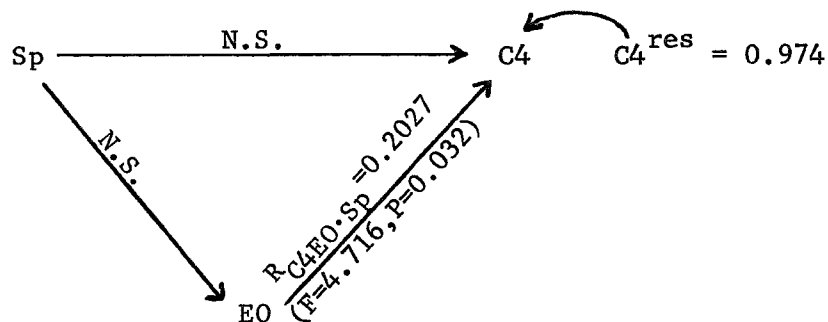
Results: E.H.4.9.1 was not supported at the .05 level of significance.

E.H.4.9.2. Perceived satisfaction of need scores regarding involvement (C2) varies directly by sponsorship of foreign students (Sp) and indirectly through their subjective English proficiency scores (ES).



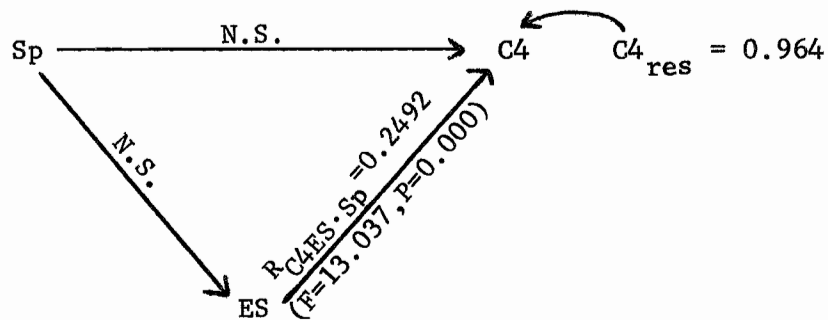
Results: E.H.4.9.2 was partially supported, which suggests that satisfaction of need scores regarding involvement varies directly by sponsorship of foreign students, those on assistantship scoring higher than those not on assistantship. Also, there is evidence to suggest that subjective English proficiency scores are related to satisfaction of need regarding involvement when sponsorship was controlled.

E.H.4.10.1. Perceived satisfaction of need scores regarding interaction (C4) varies directly by sponsorship of foreign students (Sp) and indirectly through their objective English proficiency scores (EO).



Results: E.H.4.10.1 was not supported. Only satisfaction for need scores regarding interaction varied by objective English proficiency scores when sponsorship was controlled.

E.H.4.10.2. Perceived satisfaction of need scores regarding interaction (C4) varies directly by sponsorship of foreign students (Sp) and indirectly through their subjective English proficiency scores (ES).



Results: E.H.4.10.2 was not supported. Only satisfaction for need scores regarding interaction varied by subjective English proficiency scores when sponsorship was controlled.

One of the hypotheses was partially supported for this variable. The direct effect of sponsorship on perceived satisfaction of needs for involvement was found to be significant ($P < 0.05$). Again, as with marital status, subjective English proficiency was found to remain significantly related to perceived satisfaction of needs for involvement ($P < 0.001$) and to perceived satisfaction of need for interaction ($P < 0.001$). Objective English proficiency follows the same trend

illustrating its relationship to perceived satisfaction of needs for interaction ($P < 0.05$).

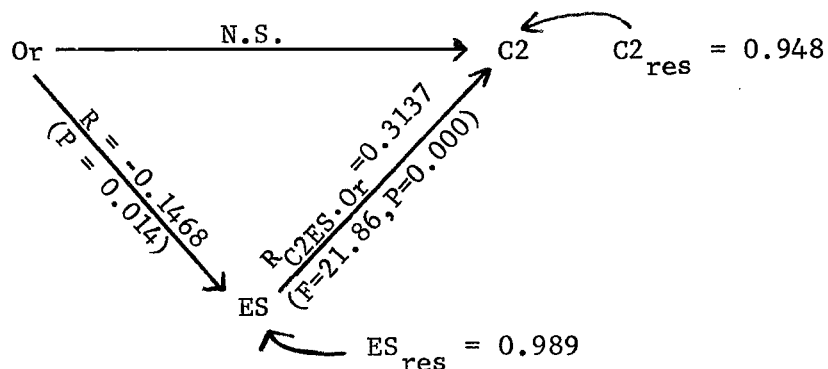
Orientation:

Empirical Hypotheses 4.11.1 through 4.12.2 involve the effect of orientation on perceived satisfaction of needs for involvement and interaction with objective and subjective English proficiency.

E.H.4.11.1. Perceived satisfaction of need scores regarding involvement varies directly by orientation of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.4.11.1 was not supported at the .05 level of significance.

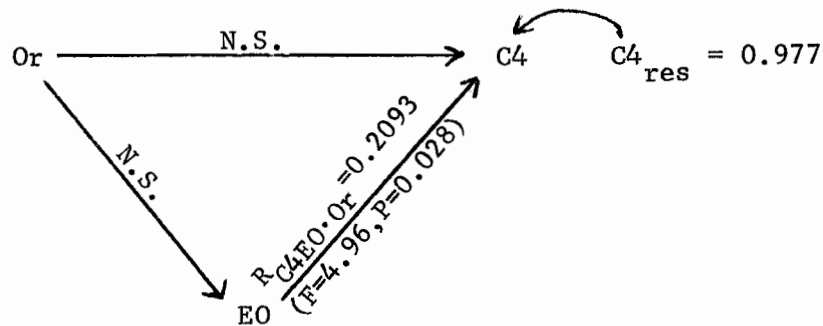
E.H.4.11.2. Perceived satisfaction of need scores regarding involvement (C2) varies directly by orientation of foreign students (Or) and indirectly through their subjective English proficiency scores (ES).



Results: E.H.4.11.2 was partially supported, which suggests that satisfaction of need scores regarding involvement varies by orientation of foreign

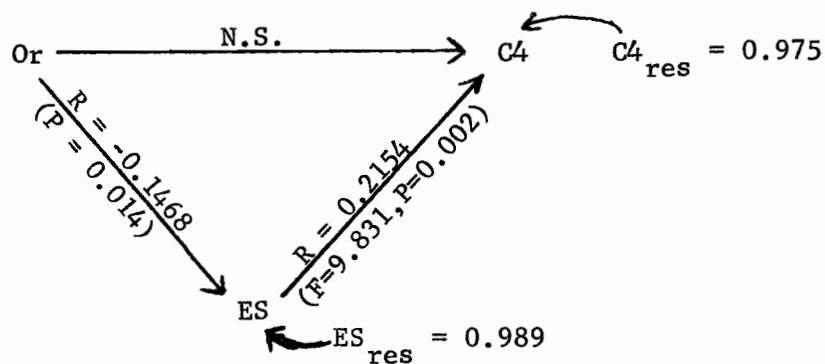
students indirectly through their subjective English proficiency scores.

E.H.4.12.1. Perceived satisfaction of need scores regarding interaction (C4) varies directly by orientation of foreign students (Or) and indirectly through their objective English proficiency scores (EO).



Results: E.H.4.12.1 was not supported. Only satisfaction of need scores regarding interaction varied by objective English proficiency scores when orientation was controlled.

E.H.4.12.2. Perceived satisfaction of need scores regarding interaction (C4) varies directly by orientation of foreign students (Or) and indirectly through their subjective English proficiency scores (ES).



Results: E.H.4.12.2 was partially supported, which suggests that satisfaction of need scores regarding interaction varies by orientation of foreign students indirectly through their subjective English proficiency scores.

None of the hypotheses was fully supported for this variable; however, the indirect effect of orientation through subjective English proficiency was found to be significant for perceived satisfaction of needs for involvement and perceived satisfaction of need for interaction. Objective English proficiency, again, gives evidence to support its relationship with perceived satisfaction of needs for interaction ($R = 0.2093$, $P < 0.05$).

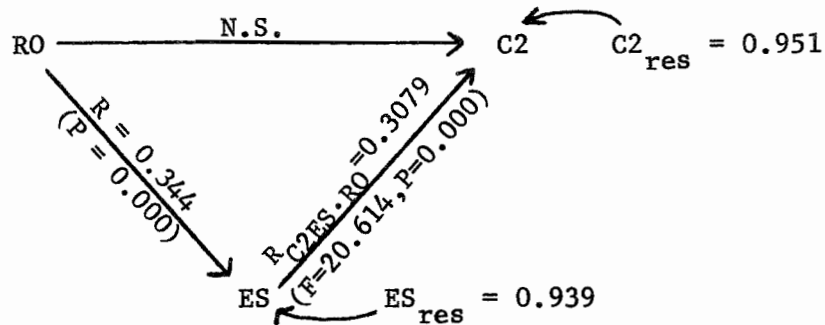
Region of origin:

Empirical Hypotheses 4.13.1 through 4.14.2 are concerned with the effect on region of origin on perceived satisfaction of needs regarding involvement and interaction with objective and subjective English proficiency.

E.H.4.13.1. Perceived satisfaction of need scores regarding involvement varies directly by region of origin of foreign students and indirectly through their objective English proficiency scores.

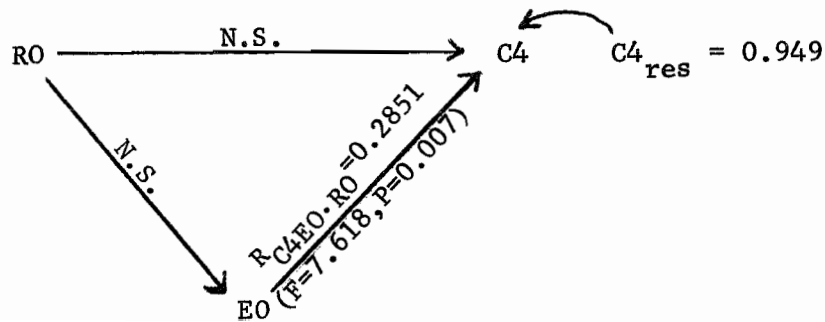
Results: E.H.4.13.1 was not supported at the .05 level of significance.

E.H.4.13.2. Perceived satisfaction of need scores regarding involvement (C2) varies directly by region of origin of foreign students (RO) and indirectly through their subjective English proficiency scores (ES).



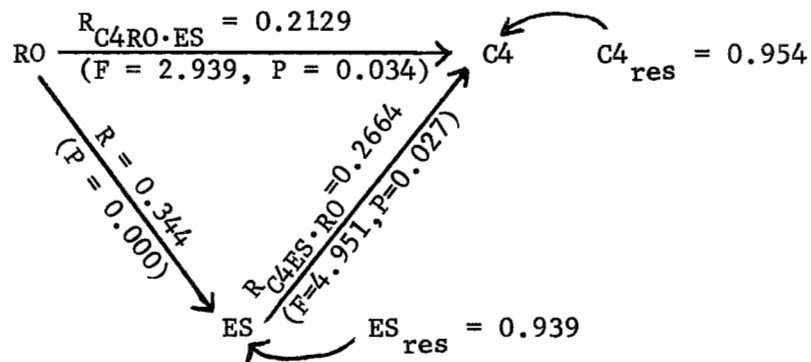
Results: E.H.4.13.2 was partially supported, which suggests that satisfaction of need scores regarding involvement varies by region of origin indirectly through their subjective English proficiency scores.

E.H.4.14.1. Perceived satisfaction of need scores regarding interaction (C4) varies directly by region of origin of foreign students (RO) and indirectly through their objective English proficiency scores (EO).



Results: E.H.4.14.1 was not supported. Only satisfaction for need scores regarding interaction varied by objective English proficiency scores when region of origin was controlled.

E.H.4.14.2. Perceived satisfaction of need scores regarding interaction (C4) varies directly by region of origin of foreign students (RO) and indirectly through their subjective English proficiency scores (ES).



Results: E.H.4.14.2 was supported, which suggests that satisfaction of need scores regarding interaction varies directly by region of origin of foreign students and indirectly through their subjective English proficiency scores. For this hypothesis, the direct effect of region of origin (0.2129) is greater than the indirect effect ($R_{ES.RO} \times R_{C4ES.RO} = 0.0484$).

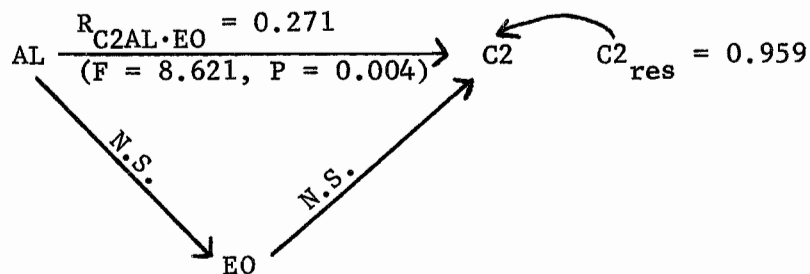
For this variable, one hypothesis was fully supported, suggesting that perceived satisfaction of needs regarding interaction varies directly by region of origin of foreign students and indirectly

through their subjective English proficiency. The indirect effect of region of origin through subjective English proficiency on perceived satisfaction of needs for involvement was also supported ($P < 0.001$). Finally, as well as consistently, objective English proficiency appears to maintain its relationship with perceived satisfaction of needs for interaction ($P < 0.01$).

Academic level:

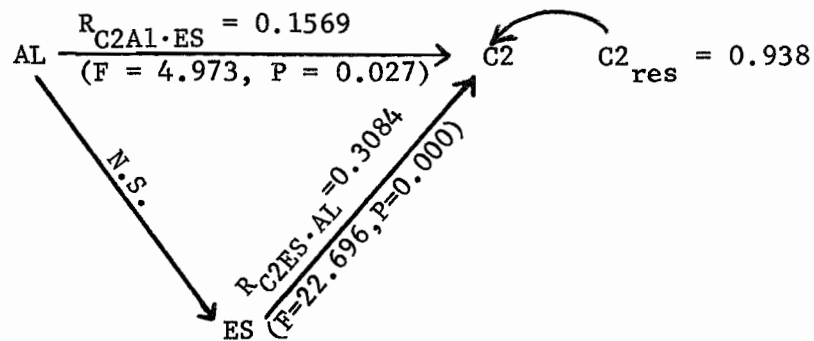
Empirical Hypotheses 4.15.1 through 4.16.2 deal with the effect of academic level on perceived satisfaction of needs for involvement and interaction with objective and subjective English proficiency.

E.H.4.15.1. Perceived satisfaction of need scores regarding involvement (C2) varies directly by academic level of foreign students (AL) and indirectly through their objective English proficiency scores (EO).



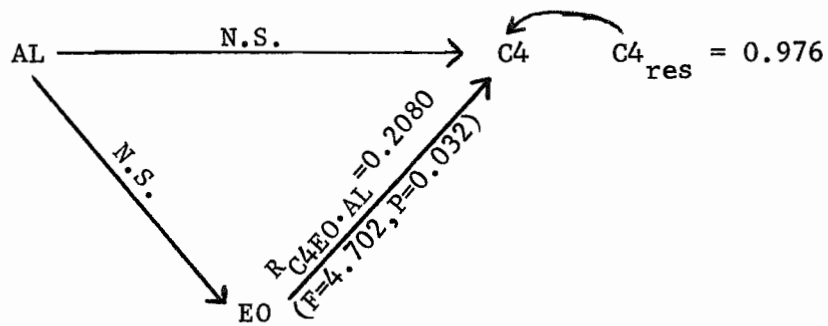
Results: E.H.4.15.1 was partially supported, which suggests that satisfaction of need scores regarding involvement varies directly by academic level of foreign students, undergraduate students scoring significantly higher than graduate students.

E.H.4.15.2. Perceived satisfaction of need scores regarding involvement (C2) varies directly by academic level of foreign students (AL) and indirectly through their subjective English proficiency scores (ES).



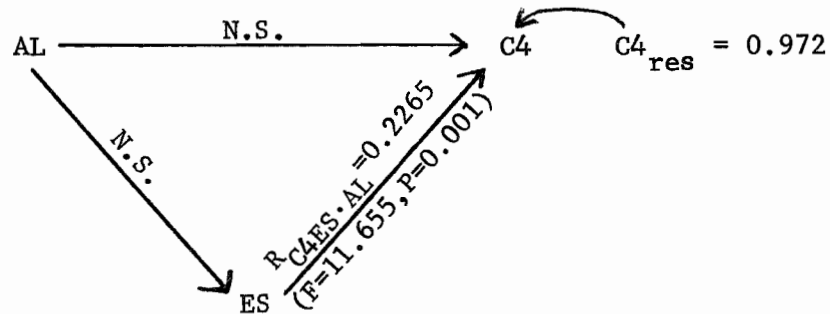
Results: E.H.4.15.2 was partially supported, which suggests that satisfaction of need scores regarding involvement varies directly by academic level of foreign students, again, undergraduates scoring higher than graduates. Also, there is evidence to suggest that subjective English proficiency scores are related to satisfaction of need regarding involvement when academic level was controlled.

E.H.4.16.1. Perceived satisfaction of need scores regarding interaction (C4) varies directly by academic level of foreign students (AL) and indirectly through their objective English proficiency scores (EO).



Results: E.H.4.16.1 was not supported. Only satisfaction of need scores regarding interaction varied directly by objective English proficiency scores when academic level was controlled.

E.H.4.16.2. Perceived satisfaction of need scores regarding interaction (C4) varies directly by academic level of foreign students (AL) and indirectly through their subjective English proficiency scores (ES).



Results: E.H.4.16.2 was not supported. Only satisfaction of need scores regarding interaction varied directly by subjective English proficiency scores when academic level was controlled.

None of the hypotheses was fully supported for this variable. However, there is evidence to support the direct effect of academic

level on perceived satisfaction of needs for involvement with objective English proficiency in the equation ($R = 0.271$, $P < 0.01$), as well as perceived satisfaction of needs for involvement with subjective English proficiency included in the equation ($R = 0.1569$, $P < 0.05$). As with marital status and sponsorship, there is evidence to support the direct effect of subjective English proficiency on perceived satisfaction of need for involvement ($P < 0.001$) and on perceived satisfaction of needs for interaction ($P \leq 0.01$), even when academic level was controlled. Equally so, there is evidence to suggest that objective English proficiency is still related to perceived satisfaction of needs for interaction ($P < 0.05$), even when academic level is controlled.

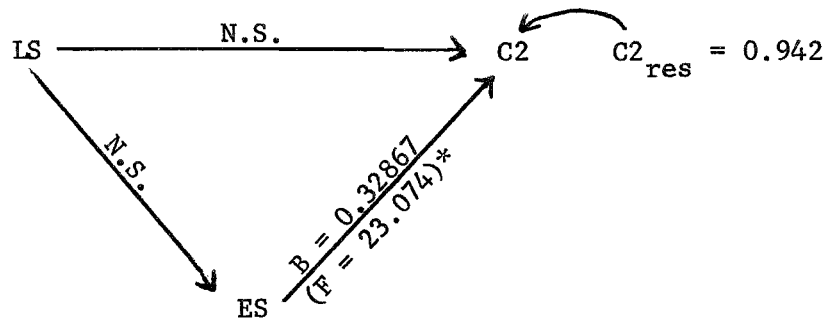
Length of stay in the U.S.:

Empirical Hypotheses 4.17.1 through 4.18.2 involve the effect of length of stay in the U.S. on perceived satisfaction of needs regarding involvement and interaction with objective and subjective English proficiency.

E.H.4.17.1. Perceived satisfaction of need scores regarding involvement varies directly by length of stay in the U.S. of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.4.17.1 was not supported at the .05 level of significance.

E.H.4.17.2. Perceived satisfaction of need scores regarding involvement (C2) varies directly by length of stay in the U.S. of foreign students (LS) and indirectly through their subjective English proficiency scores (ES).



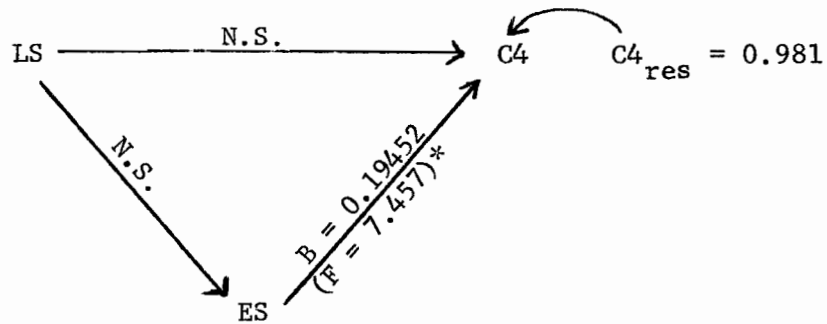
Results: E.H.4.17.2 was not supported. Only satisfaction of need scores regarding involvement varied directly by subjective English proficiency scores when length of stay was controlled.

E.H.4.18.1. Perceived satisfaction of need scores regarding interaction varies directly by length of stay in the U.S. of foreign students and indirectly through their objective English proficiency scores.

Results: E.H.4.18.1 was not supported at the .05 level of significance.

E.H.4.18.2. Perceived satisfaction of need scores regarding interaction (C4) varies directly by length of stay in the U.S. of foreign students (LS) and indirectly through their subjective English proficiency scores (ES).

*($P < 0.001$).



Results: E.H.4.18.2 was not supported. Only satisfaction of need scores regarding interaction varied directly by subjective English proficiency scores when length of stay was controlled.

None of the hypotheses was supported for this variable, however, subjective English proficiency maintains its relationship with perceived satisfaction of needs for involvement ($B = 0.3287$, $P < 0.001$) and with perceived satisfaction of needs for interaction ($B = 0.1945$, $P < 0.01$).

Discussion of satisfaction of needs

For the empirical hypotheses concerning satisfaction of needs, there appears to be an interesting difference in the results as compared to the findings regarding importance of needs. For satisfaction, two hypotheses were fully supported as compared to only one for importance of needs. There is evidence to support the hypothesis that perceived satisfaction of needs regarding involvement varies directly by sex of foreign students and indirectly through their subjective English proficiency, the direct effect of sex being stronger

*($P < 0.01$).

than the indirect effect through subjective English proficiency. Also, there is evidence to support the hypothesis that perceived satisfaction of needs regarding interaction varies directly by region of origin of foreign students and indirectly through their subjective English proficiency. The direct effect of region of origin also appears to have a stronger influence than the indirect effect through subjective English proficiency.

For the direct effect of personal characteristics on satisfaction of needs, seven hypotheses were supported, suggesting that satisfaction of needs regarding involvement and satisfaction of needs regarding interaction varies directly by sex, marital status, sponsorship, and academic level of foreign students. For the direct effect of sex and marital status, both satisfaction of needs for involvement and satisfaction of needs for interaction showed a significant difference between the groups. For the direct effect of sponsorship and academic level, only the satisfaction of needs for involvement was supported.

The effect of subjective English proficiency on satisfaction of need for interaction was maintained when controlling for field of study, age, marital status, sponsorship, academic level, and length of stay in the U.S. Again, this appears to be consistent with the hypotheses for subjective English proficiency with the satisfaction of needs for interaction. The influence of these personal characteristics, when included in the analysis, does not contribute to account for the variation in satisfaction of need for interaction.

The effect of objective English proficiency on satisfaction of needs regarding interaction was consistently supported also. Field of

study, sex, marital status, sponsorship, orientation, region of origin, and academic level, when included in the analysis, were found not to account for the variation of satisfaction of needs for interaction when objective English proficiency was controlled.

Overall, females placed higher satisfaction on the need for involvement in academic activities than males and higher satisfaction on the need for interaction with faculty members. Single students tended to feel more satisfied than married students concerning the need for involvement, whereas, on the other hand, married students felt more satisfied with the need for interaction. Foreign students on assistantship placed more satisfaction on the need for involvement than students not on assistantship. Finally, undergraduates scored higher on satisfaction of the need for involvement than graduate students.

Overall, for Objective II, the significance of the direct and indirect effects varied depending on the personal characteristic analyzed. The direct or unique contributions of sex, marital status, sponsorship, and academic level were significant for satisfaction of needs for both involvement and interaction, controlling for English proficiency. The indirect effect of sex, orientation experience, and region of origin through English proficiency was also significant for satisfaction.

The data do not include the reasons why the above differences occurred. The following reasons can be speculated for future research consideration.

Satisfaction of need for involvement in academic activities differed by marital status, sex, sponsorship, and academic level independently when English proficiency was controlled. Region of origin and orientation experience had an indirect effect via English language proficiency on this composite as well. The difference in satisfaction of this need due to marital status may indicate that single students tend to find more time for involvement in academic activities to satisfy this need. On the other hand, married students have other obligations and spend less time in these activities.

The difference in satisfaction of the above need due to sponsorship can be attributed to the fact that assistantship students are paid to engage in the types of academic activities (research, teaching, and some team work) included in this composite. Consequently, they are more satisfied with the experiences they obtain as well as have more opportunities to engage in such activities.

The difference in satisfaction of the above need due to the academic level is hard to account for. The average satisfaction score among the graduate students was lower than this among the undergraduate students. This might be rather puzzling for this composite. One possible explanation for this seemingly contrary result would be that graduate students, being aware of the available assistantship experience which they themselves are denied, might have indicated their strong dissatisfaction, while undergraduate students were not aware of differential opportunities and experiences existing in graduate school with regard to assistantship appointments. Only 20 percent of the graduate students in this sample were on the assistantships.

Region of origin was found to have a significant indirect effect on satisfaction of need for involvement through subjective English proficiency. The region of origin may reflect the existing differences in previous exposure to the English language. African students scored the highest for subjective English, and this may be so because many of the African countries, in the past, were governed by British colonies who interjected English into their system. Conversely, students from South, East, and Southwest Asia would have had less exposure and consequently feel less competent in terms of proficiency in English. Such difference perceived by students in their command of English contributed to the difference in satisfaction of need for involvement in academic activities. For orientation experiences, the differences are interesting. The negative correlation coefficient obtained for these variables indicates that those who did not attend scored themselves higher on subjective English proficiency. This seems to imply that those who felt competent in English recognized less importance for attending orientation.

Sex difference was observed in satisfaction of need for involvement. There are no data to indicate that differential treatments exist between sexes with regard to the academic activities of concern. Whether or not such treatments exist warrants further research.

Satisfaction of need for interaction with faculty members differed significantly by sex, marital status, and region of the origin. The difference due to sex, once again, is hard to account for. The comment made with regard to satisfaction of need for involvement applies to this composite also.

The difference in satisfaction of the need for interaction with faculty due to marital status may be because of a possible tendency for faculty members to be more concerned with married students than single students.

The difference in satisfaction of the above need by region of origin was also observed. African students scored highest, and South-west Asian students scored the lowest. Reasons for this variation are unknown.

CONCLUSION

From the results of this study, the fruitfulness of assessing perceived needs is manifest; it is an area that has been virtually neglected in past research. Residual values were all over 85 percent, which suggests that only 15 percent or less of the variation was being accounted for with the empirical hypotheses of this study. Therefore, factors apart from those included in this study should also be considered to account for the variation of importance and satisfaction of needs. However, with these reservations in mind, the following review and suggestions for further research are presented.

For Objective I, among foreign students with high subjective English proficiency, perceived importance and satisfaction were more prevalent than those with low proficiency, while such prevalence was not significantly noted for their objective English proficiency.

For the second objective, sex and region of origin were found to be the most prevalent personal characteristics to account for the variation in perceived needs. Females scored consistently higher than males in all hypotheses found to be significantly related. Region of origin varied as to which hypotheses were emphasized. The relationship of English proficiency to perceived importance and satisfaction of needs maintained its significance even while controlling for personal characteristics, which suggests that English is a basic factor in determining the extent of felt needs as well as satisfaction of them.

Although the relationship of personal characteristics with English proficiency was not hypothesized in this study, there is evidence to

suggest that at least three characteristics are related to English proficiency. Sex, region of origin, and orientation were found to account for some of the variation in subjective English proficiency. Males, African students, and students who did not attend orientation scored their English proficiency significantly higher than their counterparts.

The major suggestion for further research would be the analysis of subjective English proficiency in comparison to problems of adjustment for foreign students. This assessment of English proficiency, along with an objective measure of English proficiency, would enable researchers to compare the results of each in order to obtain a more valid measure of this variable. Another suggestion for further research would be to examine the relationship of various background characteristics with subjective English proficiency. The extent to which different categories of students perceive their competence would provide information as to where emphasis should be placed in terms of teaching a second language. Finally, the last suggestion for further research would be the analysis of the joint effect of personal characteristics along with English proficiency on importance and satisfaction of needs, due to the contribution of each being very small. A brief discussion on the joint effects is given in Appendix A.

In an attempt to account for variation in importance and satisfaction of academic needs selected for this study, subjective English proficiency was one of the most important contributors. When either subjective or objective English proficiency was controlled, some of the personal characteristics also contributed independently to account

for such variation. Based on this study, it seems very important for students to establish confidence in their command of English skills in order for them to have satisfying academic experience at the university.

In addition, differences due to sex, marital status, sponsorship, orientation, region of origin, fields of study, and academic level should be further investigated as to why these factors contributed to account for the variation in importance and satisfaction of academic needs.

It is hoped that this study will call attention to the desirability of studying "self-perceived needs" in relation to "self-evaluated" English proficiency and personal characteristics. Analysis of these factors would contribute significantly in making the study of foreign students from developing nations more meaningful as well as enjoyable for them.

BIBLIOGRAPHY

- Abercrombie, D. The social basis of language. Pp. 15-24 in Harold B. Allen (ed.), Teaching English as a second language. New York: McGraw-Hill Book Company. 1965.
- Babbie, E. R. The practice of social research. 2nd ed. California: Wadsworth Publishing Co. 1979.
- Berkowitz, L. Social motivation. In G. Lindzey and E. Aronson (eds.), The handbook of social psychology. Vol. 3. Reading, Massachusetts: Addison-Wesley. 1969.
- Biddle, B. J., and E. J. Thomas. Role theory: concepts and research. New York: John Wiley and Sons, Inc. 1966.
- Bohn, R. C. An evaluation of the educational program for students from foreign countries: emphasis upon orientation procedures, individual problems, and psychological variables. Unpublished Ph.D. dissertation, Wayne State University, Detroit, Michigan. 1957.
- Bohrnstedt, G. W. A quick method for determining the reliability and validity of multiple item scales. American Sociological Review 34, No. 4: 542-548. 1969.
- Breuder, R. L. A statewide study: identified problems of international students enrolled in public community junior colleges in Florida. Florida State University, Tallahassee, Florida. 1972.
- Cannon, G. Foreign students in the United States. American Association of University Professors Bulletin 45: 539-542. 1959.
- Carceles, G. Development of education in the world: a summary statistical review. International Review of Education 25: 147-166. 1979.
- Cardwell, J. D. A symbolic interaction perspective. Philadelphia, Pennsylvania: F. A. Davis Company. 1971.
- Carroll, J. B. The study of language. Cambridge, Mass.: Harvard University Press. 1953.
- Clark, V. E. W. Ghanaian students in the U.S. Unpublished Ph.D. dissertation, University of Michigan, Ann Arbor, Michigan. 1963.
- Clubine, E. The foreign student's differential knowledge and use of staff members in response to problem situations. Unpublished Master's thesis, Iowa State University, Ames, Iowa. 1966.

- Cohen, J., and P. Cohen. Applied multiple regression: correlation analysis for the behavioral sciences. Hillsdale, New Jersey: Laurence Erlbaum Associates. 1975.
- Cooley, C. H. Human nature and the social order. Pp. 143-149 in Nicholas S. Tinasheff (ed.), Sociological theory: its nature and growth. New York: Random House. 1967.
- Cooper, D. E. Knowledge of language. New York: Humanities Press Inc. 1975.
- Deutsch, Morton, and R. M. Krauss. Theories in social psychology. New York: Basic Books. 1965.
- Dewey, J. Human nature and human conduct. New York: Henry Holt. 1922.
- Dubois, C. A. Foreign students and higher education in the U.S. Washington, D.C.: American Council on Education. 1962.
- Dunnett, S. C. A study of the effects of an English language training and orientation program on foreign student adaptation at the University of New York at Buffalo. Council on International Studies, State University of New York at Buffalo, Special Studies No. 93. 1977.
- Elting, R. A. The prediction of freshman year academic performance of foreign students from pre-admission data. Unpublished Ph.D. dissertation, New York University, New York. 1970.
- Faules, D. F., and D. C. Alexander. Communication and social behavior. A symbolic interaction perspective. Reading, Massachusetts: Addison-Wesley Publishing Company. 1978.
- Fulass, H. Problems of terminology. In W. H. Whiteley (ed.). Language use and social change. London: Oxford University Press. 1971.
- Gabriel, L. R. Characteristics of foreign students on an American campus. Journal of the National Association of Women Deans and Counselors 36: 184. 1973.
- Gaither, G. H., and A. C. Griffin. The international students at the University of Tennessee. Unpublished Ph.D. dissertation, University of Tennessee, Knoxville, Tennessee. 1971.
- Goode, W. J. Norm commitment and conformity to role-status obligations. American Journal of Sociology 66: 246-258. November, 1960.

- Halasz, S. C. University of California, Los Angeles study II: graduate students from Indonesia, Korea, Pakistan and Thailand: fall, 1959 through spring, 1967. *College and University* 45: 44-52. 1969.
- Han, P. E. A study of goals and problems of foreign graduate students from the far east at the University of Southern California. Unpublished Ph.D. dissertation, University of Southern California, Los Angeles. 1975.
- Hayakawa, S. I. *Language in thought and action*. 2nd ed. New York: Harcourt, Brace and World. 1964.
- Hockett, C. F. *Man's place in nature*. New York: McGraw-Hill Book Company. 1973.
- Hollander, E. P. *Principles and methods of social psychology*. New York: Oxford University Press. 1976.
- Hountras, P. T. Academic probation among foreign students. *School and Society* 84: 157-176. 1956.
- Hull, C. H., and H. Nie. *SPSS update*. New York: McGraw-Hill Book Company. 1979.
- Hull, W. F., IV. *Foreign students in the United States: Coping behavior within the educational environment*. New York: Praeger Publishers. 1978.
- Institute of International Education. *Education for one world*. New York: The Institute. 1952.
- Institute of International Education. *IIE report on international exchange*. New York: The Institute. 1968.
- Jenkins, H. M. International education and NAFSA, 1948-1978. *International Educational and Cultural Exchange* 14, No. 1: 13-16. 1978.
- Johnson, D. C. Problems of foreign students. *International and Educational Cultural Exchange* 7: 61-68. 1971.
- Katz, J. J. *Linguistic philosophy*. London: Allen and Unwin. 1972.
- Kelly, H. H. Attitudes and judgments as influenced by reference groups: two functions of reference groups. Pp. 410-420 in G. E. Swanson, T. M. Newcomb, and E. L. Hartley (eds.), *Readings in social psychology*. 2nd ed. New York: Henry Holt Co. 1952.
- Kincaid, H. V. *A preliminary study of the goals and problems of the foreign students in the United States*. Stanford Research Institute, Menlo Park, California. 1951.

- Labov, W. Sociolinguistic patterns. Philadelphia: University of Pennsylvania Press. 1972.
- Lambert, W. E. On second language learning and bilingualism. Pp. 25-50 in H. B. Allen (ed.), Teaching English as a second language. New York: McGraw-Hill Publishers. 1965.
- Lee, M. Y., M. Abd-Ella, and L. B. Thomas. Need assessment of foreign students from developing nations: a research design. Department of Sociology, Iowa State University, Publication No. 144. February, 1979.
- Levinson, D. J. Role, personality, and social structure in the organizational setting. Pp. 428-441 in N. J. Smelser and W. T. Smelser (eds.), Personality and social systems. New York: John Wiley and Sons, Inc. 1963.
- Lindgren, H. C. An introduction to social psychology. New York: John Wiley and Sons, Inc. 1973.
- Longest, J. W. Evaluating orientation for foreign students. Unpublished Ph.D. dissertation, State University of New York, College of Agriculture at Cornell, Ithaca, New York. 1969.
- Lozada, R. C. B. Foreign students at Purdue University: a study of selected personnel and academic characteristics in relation to current experiences and future expectations. Unpublished Ph.D. dissertation, Purdue University, Lafayette, Indiana. 1970.
- MacNamara, J. Attitudes and learning a second language. In R. W. Shuy and R. W. Fasold (eds.), Language attitudes. Washington, D.C.: Georgetown University Press. 1973.
- Manis, J. G., and B. N. Meltzer. Symbolic interaction: a reader in social psychology. 3rd ed. Boston: Allyn and Bacon, Inc. 1978.
- Maslow, A. Motivation and personality. New York: Harper. 1954.
- Mead, G. H. Mind, self and society. Chicago, Illinois: The University of Chicago Press. 1934.
- Melendez-Craig, M. A study of the academic and related problems among Latin American students enrolled in the major Utah universities. Unpublished Ph.D. dissertation, Brigham Young University, Provo, Utah. 1970.
- Merton, R. K. Social theory and social structure. Revised ed. Glencoe, Illinois: Free Press. 1957.

- Mestenhauser, J. A. Research in programs for foreign students. New York: National Association of Foreign Student Advisors. 1961.
- Mestenhauser, J. A., and B. Dietmar. Foreign student advisers and learning with foreign students. Agency for International Development (Department of State), Washington, D.C. 1977. ERIC ED 152 144.
- Moghrabi, K. Educating foreigners in the United States. Improving College and University Teaching 20: 329-332. Autumn, 1972.
- Moore, F. G. The collegiate environment; the experience and reactions of foreign students, government-sponsored and self-sponsored. Preliminary draft. Bureau of Social Science Research, Inc., Washington, D.C. October, 1965.
- Moreno, J. Who shall survive. Revised edition. New York: Beacon House. 1953.
- Morris, C. Signs, language and behavior. New York: Prentice-Hall. 1946.
- Morris, R. T. The two-way mirror: national status in foreign students' adjustment. Minneapolis: University of Minnesota Press. 1960.
- Mostafa, M. N. The adjustment of selected foreign students at Iowa State University. Unpublished Master's thesis, Iowa State University, Ames, Iowa. 1970.
- Neikirk, A. V. An analysis of the perceptions held by faculty and staff, foreign alumni and foreign students of the services available to foreign students at Andrews University. Unpublished Ph.D. dissertation, Michigan State University, Ann Arbor. 1975.
- Neiman, L. J., and J. W. Hughes. The problem of the concept of role -- a re-survey of the literature. Social Forces 30: 141-149. 1951.
- Nenyod, B. An analysis of problems perceived by foreign students enrolled in state colleges and universities in the state of Texas. Unpublished Ph.D. dissertation, East Texas State University, Commerce, Texas. 1975.
- Nie, N. H., C. H. Hull, J. G. Jenkins, K. Steinbrenner, and D. H. Bent. Statistical package for the social sciences. 2nd ed. New York: McGraw-Hill Book Company. 1975.
- Ohuche, R. O. Scholastic factors pertaining to the academic achievement of Nigerian students in the United States. Unpublished Ph.D. dissertation, Iowa State University, Ames, Iowa. 1967.
- Osgood, C. E. The nature and measurement of meaning. Psychology Bulletin 49: 197-237. 1952.

- Parsons, T. The social system. New York: Free Press. 1951.
- Penn, J. R., and M. L. Durham. Dimensions of cross-cultural interaction. Journal of College Student Personnel 19, No. 3: 264-267. May, 1978.
- Porter, J. W. The development of an inventory to determine the problems of foreign students. Unpublished Ph.D. dissertation, Michigan State University, Ann Arbor, Michigan. 1962.
- Pruitt, F. J. The adaptation of African students to American education. State University of New York at Buffalo. A report. Bureau of Educational and Cultural Affairs, U.S. Department of State, Washington, D.C. 1977.
- Quinn, W. A. A study of selected sojourn preferences and priorities of Stanford University foreign students. Unpublished Ph.D. dissertation, Stanford University, Stanford, California. 1975.
- Rising, M. N., and B. M. Copp. Adjustment experiences of non-immigrant foreign students at the University of Rochester, 1967-1968. Rochester, New York: University of Rochester Press. 1968.
- Sapir, E. Language: an introduction to the study of speech. New York: Harvest Book. 1921.
- Seidenberg, B., and A. Snadowsky. Social psychology: an introduction. New York: The Free Press. 1976.
- Selltiz, C., J. R. Christ, J. Havel, and S. W. Cook. Attitudes and social relations of foreign students in the United States. Minneapolis: University of Minnesota Press. 1963.
- Sewell, W., and O. Davidsen. Scandinavian students on American campuses. Minneapolis: University of Minnesota Press. 1961.
- Sharma, S. A study to identify and analyze adjustment problems experienced by foreign non-European graduate students enrolled in selected universities in the state of North Carolina. Unpublished Ph.D. dissertation, University of North Carolina at Greensboro. 1971.
- Shattuck, G. M. Between two cultures: a study of the social adaptation of foreign students to an American community. Cornell University. Cornell International Agricultural Development Monograph No. 12. 1961.
- Shaw, M. E., and P. R. Costanzo. Theories of social psychology. New York: McGraw-Hill Book Co. 1970.

- Siriboonma, U. An analysis of student satisfaction as perceived by foreign students at Iowa State University. Unpublished Ph.D. dissertation, Iowa State University, Ames, Iowa. 1978.
- Skinner, B. F. Science and human behavior. New York: Macmillan Co. 1953.
- Slobin, D. I. Psycholinguistics. Glenview, Illinois: Scott, Foresman. 1971.
- Smith, M. B. Cross-cultural education as a research area. Journal of Social Issues 12, No. 1: 3-8. 1956.
- Spaulding, S., and M. J. Flack. The world's students in the United States: a review and evaluation of research on foreign students. New York: Praeger Publishers. 1976.
- Stafford, T. H., Jr. Relationships between adjustment of international students and their expressed need for special programs and services at a U.S. university: research implications. March, 1978. ERIC ED 155 579.
- Stone, G., and H. Farberman. Social psychology through symbolic interaction. Waltham, Massachusetts: Ginn-Blaisdell. 1970.
- Sugimoto, R. A. The relationship of selected predictive variables to foreign student achievement at the University of California, Los Angeles. Unpublished Ph.D. dissertation, University of Southern California, Los Angeles, California. 1966.
- Terwilliger, R. F. Meaning and mind. New York: Oxford University Press. 1968.
- Thomas, W. I. The definition of the situation. In J. G. Manis and B. N. Meltzer (eds.), Symbolic interaction: a reader in social psychology. 3rd ed. Boston: Allyn and Bacon, Inc. 1978.
- Turner, J. H. The structure of sociological theory, revised edition. Homewood, Illinois: The Dorsey Press. 1978.
- Turner, R. H. Self and other in moral judgement. American Sociological Review 19: 254-263. June, 1954.
- Turner, R. H. Role taking, role standpoint, and reference group behavior. American Journal of Sociology 61: 316-328. January, 1956.
- Uehara, S. A study of academic achievement of F-1 classed aliens and other non-immigrant temporary students at Kapiolani Community College. May, 1969. ERIC ED 31 202.

- U.S. Bureau of the Census. Statistical Abstract of the U.S. 10th ed. Washington, D.C.: U.S. Department of Commerce. 1979.
- West, F. The way of language: an introduction. New York: Harcourt Brace Jovanovich, Inc. 1975.
- Whorf, B. L. Science and linguistics. Technology Review 42, No. 6: 229-231, 247-248. April, 1940.
- Wilson, W. D. Social relationships of international students attending Oklahoma State University. Dissertation Abstracts International 36, No. 11-A: 7223. May, 1976.
- Wotiz, J. H. The education of foreign chemist in America. Journal of Chemical Education 54, No. 7: 413-416. July, 1977.
- Wrightsmann, L. Social psychology in the seventies. Monterey, California: Brooks/Cole Publishing Co. 1972.

ACKNOWLEDGEMENTS

The author wishes to extend sincere appreciation to Dr. Motoko Y. Lee, Department of Sociology, Iowa State University, for her valuable guidance throughout the construction of this thesis. Her generous assistance, precious advice, and constant encouragement contributed greatly to the completion of this study. Her experience and expertise were of utmost significance, for without it, this study would not have been possible.

Sincere gratitude is also extended to Dr. Mokhtar Abd-Ella, University of Tanta, Egypt, Dr. Dwight Dean, Department of Sociology, Iowa State University, and Dr. Quentin Johnson, Department of English, Iowa State University, for their helpful advice during the early stages of this thesis. A special appreciation is extended to Professor Richard D. Warren for the statistical advice he gave regarding relevant issues. Special thanks are due to Susan Gonzo in the English Department at Iowa State University for the valuable information she provided concerning English proficiency scores.

The author is very grateful to Mrs. Bonnie Trede, the typist, for being able to accommodate to the demands for typing this manuscript.

Finally, a very special thanks is given to my mother and father, James and Mary Burks, who encouraged me to achieve this goal, and to my children, Vaughn and Pamela Burks, who were very patient with me and sacrificed a great deal in order that I may achieve it.

APPENDIX A:
ADDITIONAL DATA

Grade Point Average and Objective English Proficiency

A cross-tabulation was conducted for the analysis of grade point average (GPA) and objective English proficiency. Table A.1 provides the column percentages of GPA categories by objective English quartiles, where 1 indicates individuals who fell into the first and lowest quartile, 2 for students falling into the second quartile, 3 for the third quartile, and 4 for the highest quartile of objective English proficiency scores.

Table A.1. Cross-tabulation of GPA with objective English proficiency

GPA	Objective English proficiency			
	1	2	3	4
0.00 - 2.44	11.8	4.5	4.3	3.8
2.45 - 2.84	3.9	13.6	17.1	3.8
2.85 - 3.24	35.4	22.7	33.3	28.2
3.25 - 4.00	48.9	59.2	45.3	64.2
Total	100	100	100	100

In Table A.1, for every quartile category of objective English proficiency, students are similarly distributed in terms of GPA range. For students falling in the first quartile of objective English proficiency, 11.8 percent had a grade point average between 0.00 and 2.44, but 35.4 percent had grade point averages of 2.85 - 3.24. For the third quartile, 17.1 percent had a grade point average between 2.45

and 2.84, but 45.3 percent had grade point averages of 3.25 - 4.00, which suggests that these two measures are uncorrelated ($P = 0.1533$). In other words, GPA was not dependent upon objective English proficiency quartiles.

Grade Point Average and Subjective English Proficiency

Since subjective English was categorized as an interval measure, analysis of variance was conducted for grade point average (GPA) with subjective English proficiency. Table A.2 illustrates the means and standard deviations for each of the categories of grade point average.

Table A.2. Means and standard deviations of grade point average with subjective English proficiency

GPA	Mean	St. dev.
0.00 - 2.44	40.43	9.86
2.45 - 2.84	41.43	7.64
2.85 - 3.24	38.36	8.65
3.25 - 4.00	38.23	9.15

Since the total number of points obtainable for subjective English proficiency was 49, it is evident that students in the lowest GPA range scored themselves higher for this measure than students in the highest range. Conversely, students with GPA's between 2.45 - 2.84 scored themselves higher than students with GPA's between 0.00 and 2.44 ($P = 0.4196$). Subjective English proficiency scores did not vary significantly by GPA categories. This may be due, in part, to the fact that academic success is dependent on many factors. The subject

matter itself may be difficult to comprehend, and this would be the case for all students, not just foreign students.

Joint Effect of Personal Characteristics
and English Proficiency
on Importance and Satisfaction of Needs

For exploratory reasons, each need composite was analyzed with English proficiency and other personal characteristics jointly. The joint effects with objective English proficiency were conducted separately from the joint effects of subjective English proficiency. Multiple regression was conducted by changing nominal variables with more than two categories (such as field of study and region of origin) into dummy variables. Standardized regression coefficients were judged to be significant at or beyond the .05 level of significance. In this section, only the significant relationships are reported.

Overall joint effects of personal characteristics with the objective English proficiency score were not statistically significant on any one of the composites of needs. However, with regard to the satisfaction score of need for involvement in academic activities, the individual effect of each of the following variables was significant beyond the .05 level: sex, engineering majors (or not), and agricultural majors (or not). In addition, controlling for all the other variables, sponsorship (assistantships or not) showed individual significant effects on the importance score of need for interaction with faculty members.

Overall joint effects of personal characteristics with the subjective English proficiency score were significant on both of the satisfaction composites. The joint effects of personal characteristics

accounted for approximately 27 percent of variation in the satisfaction score of need for involvement. In terms of individual effects, controlling for other variables, the following variables were significant beyond the .05 level: subjective English proficiency score, sex, engineering majors (or not), agricultural majors (or not) and sponsorship. The joint effects of personal characteristics accounted for approximately 14 percent of variation in the satisfaction score of need for interaction with faculty members. The only significant individual effect, controlling for other variables, was Southwest Asian students (or not).

Overall joint effects of personal characteristics with the subjective English proficiency score on importance scores were not significant. However, individual effects of the following variables were noted to be significant. For the importance score of need for involvement in academic activities, students from Southwest Asia (or not) made significant differences. For the importance score of need for interaction with faculty members, agricultural majors (or not), sponsorship, and students from Africa (or not) made significant differences independently.